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ABSTRACT

A project was designed to help mainstream teachers in Grades 1-3 facilitate language learning in all students, but especially in those who have language disorders. A naturalistic study followed teachers participating in the project to examine what factors promote change in teachers' knowledge, beliefs, and practice. The overall approach to language arts learning and teaching fostered by the project was a constructivist one resembling the whole-language approach. Three elementary schools in Eastern Massachusetts, and a set of 10 teachers underwent intensive training and were studied over a 3-year period. Results documented the changes teachers made with respect to the organization and climate of the classroom (finding some of the most consistent changes here), and to reading and writing instruction. Results further depicted, in mini case studies, the way each teacher changed over the 3-year period. In addition, results identified three sets of factors (teacher, intervention, and contextual) that had an impact on the change process. Results indicated that complex change in knowledge, beliefs, and practice was not a result of particular factors, but rather resulted from a dynamic interaction among factors--the teacher's abilities and desires interacted with elements of the intervention, and contextual influences interacted with the scope of the intervention. Results further indicated that the presence or absence of the critical factors (dissonance, individualization, chemistry, and coalescing) contributed to extensive, moderate, and minimal change in teachers. Findings suggest that training teachers to use a whole language approach would be most effective. (Ten tables and 5 figures are included; 159 references and 10 appendixes documenting instructional processes and teacher ratings are attached.) (PRA)

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FINAL REPORT

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EXECUTIVE SUMMARY

Children who have language disorders and are in regular classes during Grades 1-3 encounter significant difficulties because in the early elementary grades language dominates the classroom. Here, says Cazden (1973), language "is both curriculum content and learning environment, both the object of knowledge and a medium through which other knowledge is acquired" (p. 135). Learning how to listen, speak, read, and write--the four cornerstones of language arts instruction--takes precedence in the early grades. Yet, in order to learn how to listen, speak, read, and write, children need to rely on these very processes. Since the very same area in which the child's performance breaks down constitutes the essence of the curriculum, a situation develops wherein there is an "asynchrony of individual abilities and curriculum requirements" (Bashir, 1987).

The present study, funded by the U.S. Department of Education, Office of Special Education Programs, was designed to help mainstream teachers in Grades 1-3 facilitate language learning in all students, and especially those who have language disorders. The overall approach to language arts learning and teaching fostered by the project is a constructivist one, in which teachers facilitate the meaning-making process over time in environment that depends heavily on collaboration among peers. This type of approach closely resembles the basic tenets of what the literature calls the whole language approach.

The project, spanning three years (October, 1988 - September, 1991), involved intensive training and research with ten teachers from three school districts in Massachusetts. Over the three years, while the teachers were involved in EDC's comprehensive intervention, project staff carried out a naturalistic research project to examine factors affecting teacher change. EDC wanted to understand what factors promote change in teachers' knowledge, beliefs, and practice.

The design of the intervention was guided by four principles of constructivist learning. EDC guided each teacher to identify a need related to an area within language arts or to a particular child that would **anchor** the change process. The intervention was designed to champion and nourish collaboration among teachers and between trainers and teachers. In this community of learners, the construction of knowledge was a **socially-mediated** process. The intervention was designed to be **recursive**, giving each teacher a chance to engage in multiple opportunities to gain new knowledge, shift beliefs, and change practices in as flexible a way as possible. Each year we scheduled a series of workshops and provided intensive, ongoing technical assistance. Using a variety of training strategies, teachers had opportunities to return to recurring themes and issues about whole language instruction. The trainers **facilitated** the change process by modeling practices, demonstrating techniques and strategies, and providing resources.

Three elementary schools in Eastern Massachusetts, with fairly similar characteristics, participated in the study. EDC followed the same set of ten teachers longitudinally over a three-year period. EDC collected teacher data through conducting individual interviews each year, observing in classrooms, administering the Statements of Concern, gathering workshop evaluations, and gathering information during informal debriefings. Data analysis was a multi-step recursive process that included analysis of field notes, analysis of workshop evaluations, analysis of Statements of Concern, individual assessments of each teacher to develop a training plan, case studies of change over time, timelines of participation in the intervention's main events, a Practice Profile, and a matrix analysis that allowed for comparison across teachers.

The project's results are described in three ways. First, EDC documents the changes teachers made with respect to practice in three areas: the organization and climate of the classroom (physical arrangement, accessibility of materials, displays, and management structures); reading instruction (materials, instructional strategies, and assessment); and writing instruction (process writing, journals, and acceptance by teachers). Some of the most consistent changes were in classroom organization and climate. For example, many teachers changed the desks from rows to clusters, installed learning centers, reading corners, rug areas, and message centers, and allowed students more freedom of movement. A large number of teachers made changes in the areas of reading, changing over to trade books and abandoning isolated skills teaching. Other examples of change were in writing. Teachers gave students autonomy to write about their own topics and facilitated the process by brainstorming, conferencing, publishing, and allowing sufficient time for drafting. All the teachers had students write in journals, some on a more regular basis than others.

Second, EDC presents results in the form of mini-case studies that depict the way each teacher changed over the three-year period. Of the ten teachers, four teachers made extensive change, three made moderate change, and three made minimal change. As an example of a teacher who made extensive change, one third-grade teacher went from adhering strictly to a basal reader format with an emphasis on skills and assessing students on unit tests, to running a literature-based reading program using trade books only. As an example of a teacher who made moderate change, a second-grade teacher went from classroom writing as a lockstep process, all children writing at the same time on the same topic, with the same story starter, to process writing based on thematic units. Twice a week students were given autonomy to write on their own, taking as much time as they needed to do it, allowed to use invented spelling, conferencing with peers and teacher, editing and elaborating as they went along, and publishing their own books. As an example of a teacher who made minimal change, a second grade teacher went from a strict basal reader format, emphasizing skills, to a more relaxed format, still using basals, but also using trade books and abandoning workbooks for independent learning.

Third, EDC identifies three sets of factors: 1) teacher, 2) intervention, and 3) contextual that had an impact on the change process. Teacher factors include a teacher's ability and desire to reflect upon and analyze experience, collaborate, and take risks. The intervention factors include how closely the intervention was able to help teachers be anchored, carry out a recursive process, be socially mediated, and facilitate the change process. The contextual factors relate to the teacher (her past experience and knowledge, the school's policies and programs, access to resources, administrator support, and the student body), and the intervention (participants, intensity, and duration).

EDC found that complex change in knowledge, beliefs, and practice is not a result of particular factors, but rather results from a dynamic interaction among factors. The teacher's abilities and desires interact with the elements of the intervention. Contextual influences interact with the scope of the intervention. EDC identified four critical factors that derive their power from the interaction of the separate factors listed above. These include dissonance (dissatisfaction with some aspect of teaching); chemistry (positive relationship between trainer and teacher that grows out of mutual respect and a desire to construct change together); individualization (tailoring of workshops and technical assistance to meet teacher's individual needs); and coalescing (the point at which knowledge and beliefs are consolidated and give rise to a unified set of new practices).

EDC found that the presence or absence of the critical factors contributed to extensive, moderate, and minimal change in teachers. All four critical factors need to be present in order for extensive change to take place. The change process is anchored because the teacher feels dissonance in some area of teaching/learning. The intervention, in response to the teacher's felt need is individualized in the ways described above. There is a positive chemistry between the teacher and trainer. At some point, momentum builds and is sustained because of the coalescing of new knowledge, beliefs, and practice. The critical factors that contribute to moderate change in teachers are dissonance, individualization, and chemistry. What is missing is the coalescing. Minimal change is characterized more by the absence of critical factors than by their presence. The only factor that is present is individualization; however, individualization is severely limited because the teacher has not clearly identified an idea of need. The need is really identified by the trainer, with some or often little ownership by the participating teacher.

Based on the project's findings, EDC offers the following eight recommendations to those administrators and staff developers involved in training teachers to use a whole language approach in their classrooms.

1. **Create a Context for Change**. Administrator buy-in and support is extremely critical. Teachers need to be consulted about areas in which they think change is needed. Change that is directed only by administrators is not usually owned by teachers.

2. **Be Selective about Which Teachers Participate**. Teachers must want to participate and volunteer for a teacher development project. They need to have a desire to change, a willingness to work closely with trainers and colleagues, and a willingness to take risks in thinking about new knowledge, changing beliefs, and trying new practices.

3. **Train the Trainers in Constructivist Principles.** Translating constructivist principles into practice involves training the trainers. It is advantageous to a project to spend time training staff by explicitly discussing the role of the facilitator, role playing how trainers would act in certain situations, and simulating the teacher/trainer experience. It is also important to build in, from the very beginning, support system for trainers.

4. **Choose Trainers Carefully**. It is more advantageous to have internal change agents than outside change agents. Outsiders have no real influence or power, although they can be "neutral," non-evaluative, and objective. A trainer or facilitator should be familiar and comfortable with constructivist principles, have an understanding of language development, language problems, and whole language approaches. He should also have excellent interpersonal skills, power to influence change, and have a flexible schedule.

5. **Support Fundamental Change Intensively Over Time**. Implementing a constructivist approach to teacher development can be labor- and time-intensive. Those who design a program to meet this goal must carefully consider how they will allocate resources over time. Time and support is needed for teachers to become aware of or internalize

various principles, to try out a variety of new techniques and strategies aimed at achieving those principles, and then "coalesce."

6. **Adhere to the Constructivist Principles during Implementation.** Both the participating teachers, and the trainers in the project, were products of the knowledge transmission, factory-based model of schooling. This type of teaching and learning has been firmly ingrained in all of us who fall within a particular age range. There were times that trainers offered too much advice, assistance, or direction, not letting the problem solving or thinking emerge from teachers. At the same time there was a tug in the direction from teachers to fall back on a knowledge transmission mode. Thus, it is important to build in training and ongoing support for the trainers.

7. **Find Creative Ways to Provide Ongoing Assistance that Is Not Labor Intensive.** The present project had intended to build a peer coaching program into the intervention, but was not able to do so. In designing an intervention, it would be useful to think about incorporating this from the outset to reduce the labor intensity of trainers.

8. **Build in Ways to Monitor and Fix-Up the Ongoing Intervention.**
It is important to build in some kind of monitoring system to know if the four critical factors that promote or hinder change--dissonance, chemistry, individualization, and coalescing factors--are present, and to try to strengthen the program if they are not.

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CHAPTER 1: INTRODUCTION

PURPOSE OF THE PROJECT

Over the past three years (October 1988-1991), Education Development Center, Inc. (EDC) carried out a research effort focusing on teacher change in the area of language arts. Funded by the U.S. Department of Education, Office of Special Education Programs, the project involved intensive training and research with ten mainstream teachers in Grades 1-3 in three school districts in Massachusetts.[1] The goal was for these teachers, who have students identified as having language learning problems in their classes, to improve language learning for all students.

Working closely with the same set of teachers over a three-year period, EDC has helped these teachers move toward a constructivist approach to language arts teaching and learning. The underlying goal was for all students, including those with language problems, to develop as successful communicators, readers, and writers. Over the three years, while the teachers were involved in EDC's comprehensive intervention, project staff carried out a naturalistic research project to examine factors affecting teacher change. We wanted to understand what factors promote change in teachers' knowledge, beliefs, and practice.

THE NEED

Children's language development before they come to school takes place very largely through talk, through the conversations they have with the members of their immediate family circle. As soon as they enter school, however, they are expected to learn to read and write; by the time they are seven or eight years old a substantial part of their learning is dependent on their ability to cope with written language. Some children have little difficulty in mastering these skills. There are others, however, for whom written language seems to have little meaning. Despite much time and effort, they are unable to reach the stage of independence in communicating through reading and writing, and as a result their progress in other areas of the curriculum is jeopardized. All too often they come to be seen and to see themselves as failures (Goodman, 1973, 1986; Harste et al., 1982; Halliday, 1975; Holdaway, 1980; Smith, 1977, 1988; Vacca, Vacca, and Gove, 1987).

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[1] An additional group of nine teachers was included as a comparative group in the original research design. After the project began, however, we decided to focus only on intervention teachers to maximize change. In this report, we present data on ten intervention teachers only.

By the time children come to school they have already acquired a considerable degree of competence as effective communicators. One of the most important functions of schooling is to broaden the range of children's experiences and to help them become more reflectively aware of what they already know and still need to know, so that they can gradually take over more and more responsibility for their own learning. Teaching is essentially a matter of facilitating learning, and where that learning depends on communication between the teacher and the learner, the same principles apply as in any successful conversation. The aim must be the collaborative construction of meaning, with negotiation to ensure that meanings are mutually understood (Barnitz, 1980; Graves, 1975, 1982; Wells, 1986).

Children who have language disorders and are in regular classes during Grades 1-3 encounter significant difficulties because in the early elementary grades language dominates the classroom. Here, says Cazden (1973), language "is both curriculum content and learning environment, both the object of knowledge and a medium through which other knowledge is acquired" (p. 135). Learning how to listen, speak, read, and write--the four cornerstones of language arts instruction--takes precedence in the early grades. Yet, in order to learn how to listen, speak, read, and write, children need to rely on these very processes. Since the very same area in which the child's performance breaks down constitutes the essence of the curriculum, a situation develops wherein there is "a synchrony of individual abilities and curriculum requirements" (Bashir, 1987).

THE CONSTRUCTIVIST VIEW

Current "constructivist" learning theories view learners as being actively involved in constructing and reconstructing their understanding of the world. Constructivist theory contrasts with the view that learners are passive receivers of knowledge and that their understanding develops from the sequential acquisition of skills and bits of information (Eylon and Linn, 1988; Linn, 1987; Novak, 1988; Poplin, 1988; Resnick, 1983; Smith, 1989). From the perspective of the constructivist set of beliefs, knowledge does not exist independent of a knower, but instead is brought into being through a transaction between the learner and the environment. Learning is not reacting passively, but building constructively, actively, passionately (Lester and Onore, 1985).

The main characteristics of the constructivist view are that learning is

- anchored
- socially-mediated
- recursive
- facilitative

Anchored

One of the tenets of constructivism is that learners are more likely to engage in activities that are meaningful and connect with the "real world." Current work on "situated cognition" by Brown, Collins and Duguid (1989) builds on this premise. Anchored instruction has to be authentic. It is theme-based learning that takes place in a problem-solving context where information is made meaningful and useful to students (Dewey, 1933). One of the advantages of learning in problem-solving contexts is that students acquire information about the conditions under which it is useful to know various concepts and facts (Bransford, Sherwood, and Hasselbring, 1988). Laboratory studies indicate that meaningful, problem-oriented approaches to learning are more likely than fact-oriented approaches to overcome inert knowledge problems (Adams, Kasserman et al., 1988; Lockhart, Lamon, and Gick, 1988; Cognition and Technology Group at Vanderbilt, 1990).

Socially-Mediated

Another tenet of constructivism is that students learn complex thinking best in collaboration with other students. Vygotsky's work (1978) and research on cooperative learning (Slavin, 1990; Slavin, et al., 1984; Tateyama-Sniezek, 1990) suggest that students gradually internalize important problem-solving processes by engaging in those processes with others. For adult learners, teachers consistently report that the power and attraction of staff development lies in the opportunity to talk to other teachers (George, 1986; Lambert, 1989).

Recursive

Thinking and learning are recursive, nonlinear processes. For example, in the reading process, hypotheses are assessed against information in the text or against prior knowledge. Sometimes hypotheses are confirmed and new ideas are assimilated. At other times, hypotheses are rejected because they are not supported, or judgement is withheld because of inadequate information. As new ideas are assimilated or held in abeyance, readers raise new questions that form the basis for new predictions and hypotheses. Anticipating what is to come and thinking back to compare new information to prior knowledge within each phase of reading are fundamentally nonlinear thinking strategies (Jones, Palinscar, Ogle, and Carr, 1987). These recursive processes are true not only for reading, but also for writing (Flower and Hayes, 1981), listening (Lundsteen, 1979) and problem-solving (Lester, 1985).

Facilitative

To facilitate the process by which learners construct meaning, teachers involve students intellectually and physically in varied learning activities with different levels of direction, guidance, and feedback from the teacher (California State Department of Education, 1987). To help students derive and express meaning, teachers expose students to a variety of materials and recursive experiences that extend beyond textbooks and outside the boundaries of the classroom. Students frequently work in groups to share information and support each other's efforts in learning. In designing these activities, teachers take into account what students already know, specific next steps for student growth, and teaching practices and strategies that can facilitate and support students to gradually take ownership for learning (Vygotsky, 1962). Ongoing assessment is a critical component (Perrone, 1991).

Teachers who engage in constructivist teaching practices often organize instruction into the following three phases (Jones, Palinscar, Ogle, and Carr, 1987; Ciberowski, Antes, Zorfass, and Ames, 1988):

- **Setting a context for learning.** For example, teachers identify the purpose of the learning activity, focus student attention on what the activity will entail, activate prior knowledge to provide an interface between the schemata or knowledge structures already available to the learner and the new information, preview concepts and vocabulary, give directions, provide instruction through relevant mini-lessons, and make sure that students have the prerequisite skills (Palinscar and Brown, 1984).

- **Engaging students in the learning activity.** For example, teachers provide materials that foster exploration, teach study and problem-solving strategies within an "anchored situation," provide experiential activities, introduce and model metacognitive strategies, and employ cooperative teaching strategies.

The goals of this meaning-making process are to confirm and refine earlier predictions, clarify ideas, select relevant ideas from the information presented, compare the new ideas with previously held concepts, and organize and integrate new knowledge. Teachers help students monitor for understanding and take appropriate remedial measures when there has been a breakdown in building meaning (Pressley, Borkowski, and Schneider, 1989).

- **Integrating, applying, and extending new knowledge.** For example, teachers help students to refine concepts, compare and contrast new information or skills with former knowledge or procedures, and relate this learning to other situations, content areas, or learning environments. They also give students numerous opportunities to demonstrate mastery and competence (Lazansky, Spencer, and Johnston, 1987).

The constructivist approach is central to the current project in two ways. First, it represents the type of language teaching and learning EDC wants to promote in Grades 1-3 for all students. The intervention we have designed and used with teachers represents a constructivist approach to teacher development. Second, in many ways, the whole language movement (Atwell, 1987, 1990; Edelsky et al., 1983; Goodman, 1986, 1989; Graves, 1983; Harste, 1989; Newman, 1985; Reutzel and Hollingsworth, 1988; Watson, 1989) embodies the key characteristics of the constructivist approach (Brooks, 1990). We will use the term "whole language" as a short-hand in this report to describe the type of language arts instruction we are trying to promote.

WHOLE LANGUAGE INSTRUCTION

Whole language is not an instructional approach; it is a philosophical stance which has risen from research in linguistics, psycholinguistics, child development, and cognitive science (Altwerger et al., 1987; Goodman, 1986; Pearson and Kamil, 1978). Whole language is the instructional philosophy that reflects most consistently the view that meaning and "natural language" are the basis of literacy learning (Smith, 1988). At a linguistic level, whole language means that all systems of language (meaning, grammar, symbol-sound relationship) are involved in any literacy encounter. At the level of curriculum it means that students, not textbooks, are at the heart of teaching and learning (Watson, 1988). It has been emphasized that what best characterizes whole language teaching is a system of belief about language and language learning: learning grows out of the learners' purposes; it entails developing ownership of new ideas and activities; it involves taking risks; it is fostered by social interaction and requires empowerment (Wollman-Bonilla, 1991).

For students, the whole language classroom is anchored in the real world where learning is authentic and relevant, based on meaningful units and themes. It is socially-mediated in the context of the peer group where the personal power to create language is shaped by the social need to understand others and to be understood by them (Goodman, 1986; Halliday, 1973, 1975). It is recursive in that students revisit topics. Individual learning activities are not isolated and unrelated, but rather are carefully sequenced so that over time students build meaning. Teachers who believe in the constructivist approach engage in a wide variety of active teaching practices, such as setting a context for learning, linking prior knowledge with new information, arranging for peer collaboration and cooperation, and building students' confidence and self-esteem. These teachers also help students develop a repertoire of cognitive and communication strategies for gathering, organizing, and interpreting information; they help students develop metacognitive strategies so they can monitor their work and make self-corrections; they structure instructional challenges so students can gradually acquire skills, processes, and concepts; they encourage students to take ownership for tasks and give them freedom to investigate their own ideas. What binds these practices together is that they are all aimed at facilitating learning--facilitating the construction of knowledge (Bialo and Sivin, 1990; Collins et al., in press; Dillon, 1989; Jones et al., 1987; Martinez and Lipson, 1989; Russell et al., 1989; Wiske, 1990; Wolf, 1989).

For example, a second-grade teacher might design a unit on whales. With a small group, she would find out what students already know and what they want to know so she can anchor the unit in the students' concerns. She would organize students into small cooperative groups so they could work together to explore personally meaningful questions. The teacher would gather a wide variety of materials, e.g., books, videos, simulations, hands-on manipulatives. Students would build concepts over time as they engage in a variety of whale-related activities, such as taking field trips, looking for more resources outside of school, writing reports, publishing a class book, doing a mural, and doing a play.

On theoretical grounds, this type of approach seems to be beneficial to students with language learning problems. There are many anecdotal instances showing the benefits of whole language and constructivist approaches for special needs students in the mainstream (Allen et al., 1991; Brazee and Haynes, 1989; Cousin and Aragon, 1991; Erdman, 1991; Herborn, 1991; Silvers, 1991). Studies by Avery (1987), Edelsky et al. (1983), and Martinez et al. (1989) focus on how rich language learning environments aid in reducing risks for these students, especially because teachers respond to special needs students as individuals.

On the whole, however, research in this area is still emergent. Several studies that originally set out to examine outcomes for special education students have shifted to documenting changes in teachers who were moving toward embracing a whole language approach. For example, many papers presented at the 1991 Annual Meeting of the American Educational Research Association (held in Chicago) reveal the challenges teachers face. These papers focused on examining the philosophy and practice of whole language (Prakash, 1991; Vaughn, 1991), on defining whole language (Baumann, 1991; Jipson, 1991; Render, 1991), and on mainstreaming (Gersten and Christensen, 1991; Janesick, 1991; Zigmond and Fitzgerald, 1991). A current research study at EDC, "Teacher As Composer," also funded by OSEP, is examining the issue of mainstreaming special education students in general education. It examines the thinking processes teachers engage in as they plan and carry out constructivist teaching practices in language arts.

TEACHER CHANGE: A "CONSTRUCTIVIST" INTERVENTION

Knowledge is constructed in the process of reflection. Constructivist theory of learning is not limited to children's acquisition of knowledge. All learners must construct new knowledge for themselves based on experience. Over the past twenty years (Freire, 1970; Knowles, 1980; Paulston, 1972; Sheehy, 1974), there has been considerable attention paid to what promotes effective teacher development. The literature has identified a set of characteristics that are important components of an intervention aimed at promoting change in teachers.

1. Teachers need to take ownership of the process, identifying ways in which they want to change.

One of the most common and serious mistakes made by both the administrators and leaders of a change process is to presume that once an innovation has been introduced and initial training has been completed the intended users will put the innovation into practice (Hord et al., 1987). To promote teacher cooperation, program goals and the means for their implementation must be developed cooperatively by administrators and teachers. Teachers' beliefs are critical to the success of a program. They are more likely to support ambitious, demanding programs if they have helped to shape and develop the projects. Teachers are willing to take on the extra work of program improvement if they believe their efforts will make them better teachers and help their students (Samuels and Pearson, 1988).

2. Teachers need to work collaboratively with their colleagues.

Collaboration breaks the grip of psychological isolation from other adults that characterizes the teacher's workplace (Sarason, 1971). A collaborative group can furnish the emotional support and encouragement teachers need to cope with the risk that is inherently involved in learning to teach well. Colleagues can demonstrate to one another that they value attempts at growth and reassure group members that the effort and pain are worth it (Nemser, 1983).

Peer coaching, one of the most powerful helping relationships for teachers, is a teacher-to-teacher interaction aimed at improving instruction. Embedded in this approach is the belief that teachers are their own best resource (Glatthorn, 1987; Loucks-Horsley et al., 1987; Joyce and Showers, 1987). Teachers who go through formal peer coaching experiences can gain 1) a better understanding of the teaching/learning process, 2) self-analysis skills, 3) improved teaching performance, and 4) a more positive attitude toward instructional support. Individuals do not teach and learn in isolation. Schools that build and sustain a culture of cooperation and that encourage the sharing of job knowledge do a particularly effective job of educating students (Lester and Onore, 1990). Coaching deepens collegiality, increases professional dialogue, and gives teachers a shared vocabulary to talk about their craft (Garmstrong, 1987). Teachers in peer coaching situations instruct, train, and tutor one another. This personal, in-classroom assistance provides teachers with technical feedback and guides them in adapting the new practices to their unique classroom settings (Joyce and Showers, 1982).

3. Teachers need to have exposure to a variety of training experiences that give them an opportunity to build theory, gain knowledge, and change practice.

One of the essential components for implementing a successful staff development program is to include a variety of activities and make provision for the different teaching styles of participants (Webster, 1980). Teachers bring to staff development their knowledge and skills, their learning and teaching styles, and their personal characteristics such as states of growth, conceptual flexibility, sense of efficacy, and self-concepts. From a staff development point of view, these variables need to be taken into account when planning and implementing training programs (Showers, Joyce, and Bennett, 1987). Learners request theory and demonstration in proportion to their needs, thus drawing from the instructor in any given situation the elements they know they will need for eventual skill mastery and implementation (Joyce and Showers, 1988). Long (1983) points out that "there is no single technique or format best suited to meet the needs of all students" (p. 257). Variety and flexibility seem to be the best guides for choice of instructional strategies. Those strategies should be marked by active participation and reflective analysis and integration (Roy, 1987).

4. Teachers need to have ongoing support and assistance.

Ongoing support and assistance can be accomplished through demonstrations and workshops, as well as co-planning and co-teaching with a trainer. Co-planning, co-teaching, and debriefing that involves teacher and trainer help to establish a personal relationship that builds trust and mutual respect. This trust and respect supports learners so they are willing to take risks. Having a trainer share the teacher's world provides opportunities to establish collaborative relationships, to reflect and share what was observed (Lester and Onore, 1990).

Having opportunities to practice a new skill and receive feedback on performance is helpful for effecting a behavioral change. This practice takes time. The simplest form of practice occurs in the classroom, when the teacher tries out a new practice and receives "feedback" by observing the effect on students. The desired results are often immediately apparent (Sparks, 1983). For most teachers and most skills, however, purposeful structured practice and feedback activities seem to work best (Joyce and Showers, 1980).

OVERVIEW OF THE REPORT

In Chapter 2, we describe the intervention in terms of its goals, guiding principles, and components. Chapter 3 describes the methodology we employed to study the change process in teachers. Chapter 4 presents the results in three parts: what were the actual changes teachers made, case studies of change, and factors affecting the change process. In Chapter 5, we discuss recommendations for promoting teacher change based on our results.

CHAPTER 2: THE INTERVENTION

OVERVIEW OF CHAPTER

In this chapter, we discuss the goals of the intervention, the constructivist principles that guided the design of the intervention, and the components of the intervention.

GOALS OF THE INTERVENTION

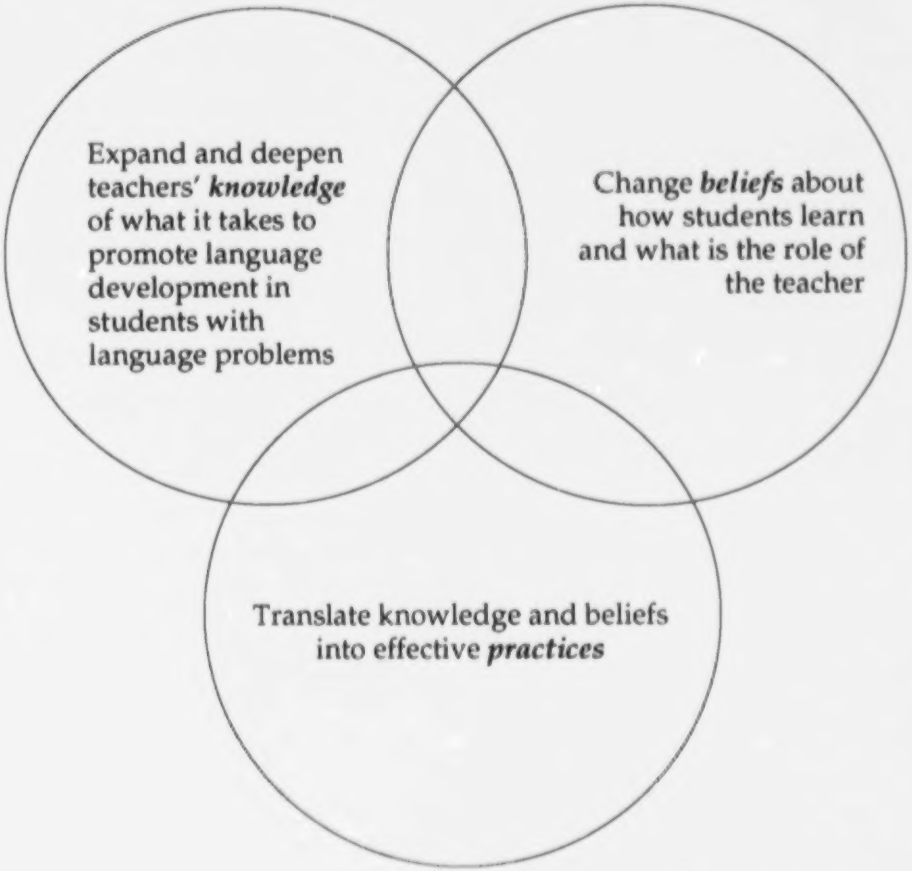
Figure 1 presents the three, interrelated goals of the intervention. Each represents one aspect of teacher change (Fullan, 1991) within the area of language arts. One goal is to *expand and deepen teachers' knowledge* about the following:

- what normal language development and processing looks like and what kinds of problems can interrupt or hinder this process
- how to better understand (assess, diagnose) the language development and processing of individual students, particularly those with special needs in language development
- what is involved in a whole language approach and how such an approach can benefit all students, including those with special needs
- what types of strategies, techniques, and materials bring a whole language approach alive in a classroom and how to implement them

Another related goal is to *change teachers' belief structure* about how students learn and the role of the teacher. This sea change involves moving away from a view of teaching as transmitting knowledge to "empty" learners who need to be filled up with information and towards the belief that the teacher facilitates a process whereby students integrate old and new information to construct knowledge or meaning over time. It involves moving away from seeing the teacher as the central force, to seeing students at the center of learning. (Fullan, 1991)

Figure 1

GOALS OF THE INTERVENTION


Expand and deepen teachers' ***knowledge*** of what it takes to promote language development in students with language problems
Change ***beliefs*** about how students learn and what is the role of the teacher
Translate knowledge and beliefs into effective ***practices***

The third goal is that, with expanding knowledge and a shift in beliefs, teachers *change their behaviors and practices*: what they do in actuality becomes a reflection of what they know and believe about language arts teaching and learning. For example, they will use different materials (e.g., literature instead of basals), will organize their class in a different way (e.g., so that students have choices and can interact with one another), will interact differently with students (e.g., eliciting prior knowledge and helping students link new and old knowledge), and will use a different repertoire of strategies (e.g., peer conferencing, story retellings, modeling).

GUIDING PRINCIPLES

Drawing on the key characteristics of the constructivist approach, our intervention was designed in such a way as to be anchored, socially-mediated, recursive, and facilitative.

The construction of knowledge and meaning about teaching and learning does not happen in the abstract, but rather in an educational context, related to a particular instructional issue, or centered on an area of student need. The entire enterprise of the intervention was **anchored** on helping students with language problems become successful learners in the mainstream classroom. Going even further, we encouraged each teacher to identify an area within language arts (e.g., reading or writing), and to identify particular students that she wanted to concentrate on. This then become the context for change.

The intervention was designed to promote **social mediation**, that is, to champion and nourish collaboration (1) among participating teachers and (2) between trainers and teachers. The purpose of collaboration among the participants was to promote sharing knowledge, generating ideas, and supporting new practices. The focus on the collaboration between trainer and teacher was one of co-planning, co-teaching, and debriefing. While this process allowed the teacher to take ownership, it provided a shared enterprise where teacher and trainer could work together to co-construct knowledge.

The process by which teachers deepen their knowledge, shift beliefs, and change behavior/practice is not a linear one, but rather is **recursive**--evolving, interactive, and iterative. Some teachers are exposed to new ideas; they try out something in the classroom; they develop a new perspective or belief structure depending on their analysis of outcomes. Others, taking a different route, may pilot a new practice; better understand what they are doing with exposure to new information; and then shift their belief. There are multiple pathways within and across individuals for achieving the three goals of the intervention. The intervention was designed to give each participant multiple opportunities to gain new knowledge, shift beliefs, and change practices in as flexible a way as possible. Each year, we scheduled a series of workshops and provided intensive, ongoing technical assistance. We used a variety of training strategies, co-mingling a top-down "theoretical" approach with a "bottom-up" hands-on approach, to give teachers opportunities to return to recurring themes and issues about whole language instruction and construct new ways of thinking based on their individual needs, abilities, and styles.

In our intervention, we provided **facilitation** in a variety of ways. For example, we coached teachers following initial training. Coaching provides support for the community of teachers attempting to master new skills, provides companionship and collegial problem solving as new skills are integrated with existing behaviors and implemented in the instructional setting (Fosnot, 1989; Joyce and Showers, 1988; Lester and Onore, 1990; Saphier and King, 1985). In addition, the trainers facilitated the change process by modeling practices, demonstrating techniques and strategies, and providing resources. All these training methods provided the scaffolding for trying new ideas and developing a total approach. We used film, videotape, and conducted live sessions in workshops and in classroom when we modeled or demonstrated instruction. For example, videotapes were used at several workshops to model integrated language teaching strategies. We watched and discussed videos depicting reading within a whole language classroom and the writing process in operation. On one occasion, a videotape of the invited speaker's own classroom served to illustrate and reinforce her verbal descriptions. During a workshop, we demonstrated actual lessons in teaching vocabulary and in teaching poetry. Planning, modeling and debriefing took place with the teachers in their own classrooms.

COMPONENTS OF THE INTERVENTION

In the section below, we discuss the intervention, year-by-year. For each year, we identify the goals, and show how our constructivist approach was aimed at meeting these goals.

Year 1

In Year 1, our goals were for the participating teachers to do the following:

- set goals by developing a shared vision of the purpose of the project
- form collegial bonds with each other and with the trainers
- begin to identify specific areas, needs, and concerns that would anchor each individual's change process
- begin to deepen knowledge about student needs and how a whole language approach could meet student needs

To meet these goals, we conducted four workshops at EDC from the winter through summer of the 1988-9 school year and began providing technical assistance to the teachers on a regular basis at their schools.

Workshops

Figure 2 shows a timeline of the workshops in Years 1-3 and lists the content for each one. We organized the content so that it would move back and forth from the general to the specific, from theory to practice. We used a variety of methods, not only during the Year 1 workshops, but in Years 2 and 3 as well. For example, we included lecture and presentation from project staff and guest speakers, demonstration, brainstorming in large and small groups, joint planning, simulations, video, sharing, joint problem solving, and "make and take" sessions. In each workshop we distributed articles about teaching and learning, made available books and resources on loan, and gave teachers names and addresses of publishers.

In the winter of 1989, we held a separate, initial "get acquainted" workshop for each site for a variety of reasons: each site joined the project at a different time, sites had prior commitments that made scheduling one workshop for all sites impossible, and we thought we would be better able to build trust on a one-by-one basis. During this workshop, we introduced the project and ourselves. We asked the teachers to tell about their worst and best teaching experiences. Drawing on their "best" experiences, we discussed the role of prior knowledge in fostering comprehension. Having asked them to bring their basal texts to the workshop, we brainstormed ways of working with stories that went beyond the suggestions in the teacher's manual.

Two of the three sites attended the second workshop held in April 1989 at EDC (the third site was on strike). Here we focused on the special needs child. We asked the teachers to bring samples of their special students' work and asked them to share the work with everybody. We talked about the theoretical aspects of language and language acquisition. The objective of this presentation was to give the teachers an appreciation of how language works. Such awareness would provide the tools to assess students' strengths--what they know--in speaking, reading and writing. In the afternoon one of our trainers demonstrated how poetry can be used to integrate reading, writing, listening, and

Figure 2

PROJECT FULFILL
WORKSHOPS

WORKSHOP	Year 1–1989								Year 2–1989/1990												Year 3–1990/1991															
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1. Get Acquainted *	●	●	●																																	
2. Theory and Practice				●																																
3. School visit					●																															
4. a. Whole Language Practices						●																														
b. The Writing Process						●																														
5. The Writing Process											●																									
6. Children's Literature–Thematic Units													●																							
7. School visit																	●																			
8. Practical Application																		●																		
9. School visit																						●														
10. Evaluation of Whole Language																								●												

* Separate Workshops for each site

speaking. We then brainstormed ideas on strategies to help the special needs child with reading and comprehension. This session helped some teachers become more anchored by focussing on a particular child's needs.

During the third workshop, held in May, the teachers from two schools spent the morning visiting the teachers in the third school. The observation site was chosen because teachers at that site were adhering to some of the whole language principles. The goal was to start to give teachers a vision of what constructivist principles looked like in action in classrooms. In the afternoon, all teachers met back at EDC to debrief and discuss the classrooms observed in terms of goals, strategies, and student outcomes.

The last workshop of Year 1 was held during two days as soon as school ended in June. Here we focused on giving a comprehensive image of the whole language approach, giving teachers a chance to learn particular strategies, and expanding knowledge about the writing process.

Ongoing Technical Assistance

Before we could actually start working with teachers, we needed to accomplish the following:

- better understand contextual factors that would play a part in our working relationship (e.g., students, methods, materials, ways of managing instruction)
- build trust
- give teachers an opportunity to identify concerns or the area they wanted to concentrate on

To accomplish these goals, we observed in classrooms and met with teachers to debrief about what we had seen. In these meetings teachers explained what they were doing, talked about students, and planned future lessons. We listened to their concerns, offered advice, gave our input when asked about instruction, and asked probing questions aimed at having teachers think about the learning process. Sometimes, to help a teacher clarify her thinking, we showed her our notes and discussed the documentation of a student's behavior in relation to a teaching strategy. Many times during our classroom visits we interacted with students, asking them to talk about what they were doing so that we could talk more knowledgeably to teachers about what was really happening in their classrooms.

Year 2

While Year 1 was seen as an introductory year, aimed at building relationships and immersing participants in the intervention,

Year 2 (as well as Year 3) was seen as a time to more aggressively support teacher change. We wanted teachers to

- learn about and try out new ideas
- use these new ideas with special needs students
- reflect on what they were doing and thinking

Workshops

We held four workshops in Year 2, from the fall through the summer of the 1989-90 school year (see Figure 2). The first workshop, held in November, began with a review of project goals and a discussion of teachers' concerns. Issues related to the writing process were discussed. Teachers shared strategies and viewed and discussed a videotape on the subject. The invited speaker, a teacher who had participated in a previous EDC project, described how he implemented a writing workshop in his classroom. A question and answer period led to a discussion of strategies related to helping children with special needs.

The second workshop, held in January 1990, focused on facilitating discussions through the use of literature-based thematic units. In preparation, project staff gathered library books on three different themes (i.e., dreams, friendship, problem solving). At the workshop, teachers chose a topic of greatest interest to them. In small groups they brainstormed plans for literature-based mini-units with special attention paid to ways of helping students generate meaning by linking old and new information. Teachers brainstormed and shared strategies for improving class discussions, including ways to increase the participation of special needs students.

For our third workshop, we responded to teachers' requests to observe whole language in operation by arranging a site visit to a school that was implementing whole language. Project teachers observed in first-, second- and third-grade classrooms during the morning. Later, they and the school's staff met together to debrief about the morning's observations. Conversation focused on the process of making a transition to an integrated/whole language classroom and on the outcomes of teaching children grouped by interest rather than ability.

A one-day summer workshop, held in June, focused on the pragmatics of teaching in a whole language classroom. The invited speaker, a second-grade teacher from a school in New Hampshire and former participant in the University of New Hampshire Writing Project, described in depth the daily routines and learning activities in her classroom and answered questions about her own metamorphosis from traditional to whole language teaching. After her presentation, time was spent planning for Year 3.

Ongoing Technical Assistance

In Year 2, the technical assistance component became more focused. Working individually with teachers, we engaged in intensive cycles that involved co-planning, co-teaching, and debriefing. We tried to help teachers identify an area of the curriculum on which to concentrate (e.g., writing personal narrative; how to publish a class book; conducting writing conferences; how to set up book-sharing activities; developing personal timelines; doing a unit on animals; encouraging thematic units such as a "friendship" unit in the second grade and a unit based on "turtle stories" in the third grade). We didn't want the focus to be on just one activity--but on a larger, more meaning-making context. When we met with teachers to plan instruction, we tried to help them think about the needs and abilities of the entire class as well as the particular needs of those students with special problems. During the teaching of these new activities, we were in the classroom to provide assistance. Sometimes this took the form of working with a small group of students, or co-teaching. For example, while we taught one group of students how to develop a timeline of school activities, the teacher worked with another group of students doing the same thing. After instruction, the teacher and trainer would meet to debrief and compare notes. They particularly talked about what worked or did not work for all students, including those with special needs, and how they would modify future instruction. For example, in one cycle, one of the trainers worked with Laura, a second-grade teacher. Laura had been stimulated by the thematic unit workshop for which we had collected 150 books from the public library on friends, dreams, and problem solving. Laura was anxious to try process writing and wanted to use the friendship theme as a focus. As we planned for this, she borrowed our books and had them in the classroom for the students to browse through. Laura chose two or three titles which she read to the class. Trainer and teacher brainstormed the themes of friendship with the whole class and talked about what it meant to be "best friends": personalities, characteristics, behaviors, qualities, and quirks. Next, the students were told they could write a story about their best friend if they wanted to, but weren't particularly constrained to this topic. They were told they could choose any aspect of the topic they wanted. Laura, her student teacher, and the trainer also wrote at this time. As discussed during the co-planning, Laura did not help students with spelling at this time, a departure from usual practice. During the debriefing, Laura said she was particularly impressed with the intensity with which children wrote, and with their extended attention span. Laura was motivated to plan for another session the following week to help with writing conferences.

During this time, and continuing in Year 3, we carried out demonstration lessons in classrooms upon a teacher's request. Before these lessons, we explained what we were planning to do and solicited advice from the teachers; after the lessons, we met with teachers to debrief. When we worked with individual students or small groups in the classroom, we tried to model the types of interactions that promoted student thinking and ownership of tasks.

Year 3

In Year 3, we continued to work closely with teachers to accelerate the change process. We held two workshops (see Figure 2), concentrating more of our time on providing intensive technical assistance.

Workshops

The first workshop, held in October, responded to the requests of the teachers to see more classrooms that embodied whole language principles and practices. We organized a visit to three elementary schools within a district about 10 miles southeast of Boston. After morning visits to several schools, the teachers we observed joined project teachers and research staff for debriefing. This workshop differed in format from the previous year's school visit in two important ways. Based on suggestions from several of our teachers, administrators joined our debriefing. Secondly, because visits were spread out over several schools, participants did not all see the same classrooms.

Our last workshop, held in December 1990, concentrated on the issue of evaluation. The topic was suggested by several teachers based on our poll of their needs. Our invited speaker, a classroom teacher, described the evaluative process she uses to assess children's work within her whole language classroom.

Since she integrates children with special needs into her classroom, her presentation was relevant to our teachers.

Ongoing Technical Assistance

In Year 3, we continued to carry out the cycles of co-planning, co-teaching, and debriefing. Many of these cycles involved trying out new ideas that had been demonstrated or discussed during workshops in the past years. For example, one teacher wanted to do book publishing, which had been part of the summer workshop of Year 1.

Several teachers became more deeply involved in the writing process, which was a topic that had received ongoing attention across many workshops. For example, as a result of the children's literature workshop, two teachers collaborated with each other to develop a joint "dream" unit, having their students write personal narratives about sleep-overs and dreams. We helped another teacher, who had no experience with process writing, initiate writing conferences. A third-grade teacher was interested in getting her students involved in peer conferencing. All the teachers were interested in technical assistance with integrating their special needs students and wanted help in how to include them in language activities.

CHAPTER 3: METHODOLOGY

OBJECTIVES

The purpose of the study was to investigate the change process in teachers who were implementing a whole language approach with language/learning disabled students in mainstream classrooms. Three research questions guided this study:

- Would teachers deepen their knowledge, shift beliefs and change their practices to use a whole language approach in their classrooms?
- Would they use this approach not only with normally achieving students, but with special needs students as well?
- Which of the components of a constructivist approach appear to be particularly useful in helping teachers to change?

The results of this study help us understand what promotes change and particularly what impact a constructivist intervention has on teacher change.

OVERALL APPROACH

We carried out a three-year longitudinal study, following teachers in Grades 1-3 for that period of time. Our original design was to have 18 teachers across three schools, participate in the study. Nine would participate in the intervention and nine would serve as controls. Because two teachers were team teaching at the Austin School in Grade 3, we had ten intervention teachers instead of nine. We had also intended to follow students from one year to the next, longitudinally. For example, students entering the study in Grade 1 with one of our teachers would remain with the intervention teachers in Grades 2 and 3, over the three-year period. The realities of school life, population shifts, parental choice, and other factors prevented the full implementation of this design. As a result, the focus of our study shifted from a comparison of two groups of teachers and students to a focus on the changes that occurred in the group of teachers receiving training.

EDC'S ROLE IN THE FIELD SITES

The EDC project staff played two roles. On the one hand, we served as trainers who designed and often conducted workshops and worked closely with teachers to provide technical assistance. On the other hand, we served as researchers, carrying out a naturalistic study to document the change process. Our documentation--interviews, direct observations, and case studies--included careful accounts of our interactions with participants and how they responded to and acted on our suggestions. The advantage of being a participant-observer was that we were able to modify the intervention on an ongoing basis to better meet participants' needs (Yin, 1986).

SAMPLE

Three elementary schools in Eastern Massachusetts participated in the project. They are the Regan School in Filmore approximately 25 miles west of Boston; the Spellman School in Hilton, approximately 25 miles north of Boston; and the Austin School in Waterbury within a six mile radius of Boston. The three districts have similar characteristics. They are predominantly white (97% to 98%), middle class communities. The median per capita income ranged from $9,766 to $16,058 (per capita income for 1980, U.S.Census Bureau). In each of the towns, a quarter of the population had completed high school. Each town experienced increases in population since the last U.S. Census (1980). Table 1 (Demographic Characteristics) presents the 1980 demographic characteristics of the three sites.

Filmore is a medium size city that has both inner city and suburban characteristics. With a total population of 39,580 people, the median per capita 1980 income was $9,766. Hilton, a medium size city north of Boston, had a median per capita income of $12,512.

Table 1

DEMOGRAPHIC CHARACTERISTICS OF COMMUNITIES/SCHOOL DISTRICTS

	FILMORE	**HILTON**	**WATERBURY**
Population	39,580	46,865	34,385
Median family income	17,924	18,890	22,097
Per capita income	9,766	12,512	16,058
Percentage of persons below poverty level	12	10	6
White	38,270	45,660	33,720
Black	605	504	160
American Indian, Eskimo, Aleut	56	46	2
Asian and Pacific Islander	105	128	285
Spanish Origin	1,095	931	507

1980 Census of Population
General, Social, and Economic Characteristics
Massachusetts
Washington, D.C.: United States Department of Commerce, Census Bureau, June 1983

It used to be a typical New England mill town which has evolved into a center for small manufacturing, high tech and service industries. The 1980 population was 46,865 of which 97% was white and 3% minorities. Hispanic-Americans make up the largest segment of the minority population. The school population of 7000 was 85% white and 15% minority. Seventy percent of the school population were in elementary grades, distributed over fifteen elementary schools. Ten percent received Chapter I services. Waterbury had a higher per capita income, $16,058, than either Filmore or Hilton and only half as many people living in poverty (6%). It had a population of about 34,385 (1980 Census figures), 98% white and 2% minority. Waterbury had three elementary schools, one middle school, and one high school.

Sites

In each of the three districts we contacted the Special Education Director who recommended schools within his district he deemed appropriate for this research project. We then contacted the principals of these schools and asked them to recruit one volunteer teacher each in Grades 1, 2, and 3. Three teachers each were recruited in two of the three schools, and four teachers in the third school because two Grade 3 teachers were team teaching.

Regan School

The Regan School in Filmore serves 720 students in Grades 1 through 5. It is the largest of the three participating schools. Over 40% of the students are on the free lunch program. Thirteen percent represent various minority groups, including African, Asian, and Hispanic-Americans. Sixteen specialists, including teachers for the deaf, resource room teachers, ESL teachers, Chapter I teachers, a speech and hearing specialist, and a learning disabilities teacher service approximately 350 students, or one half the student population.

Classrooms in the Regan School are self-contained. At the start of the study, reading was taught from basal reading series which include texts and workbooks. Writing was taught at the discretion of the teacher and was not mandated as part of the curriculum. Children who received special services were pulled out at various times of the day for their specialties. The Regan School has an attractive library with a full-time librarian on its staff. Classrooms are regularly scheduled to use the library on a weekly basis.

Spellman School

The Spellman School in Hilton is small, with 330 students in Grades 1 through 4. Approximately fifty of these students are bilingual. This school was singled out by the superintendent and director of special education as being the "neediest" in the system and the one "most likely to benefit from taking part in the research project." The school day is divided into regular 40-minute periods, punctuated by bells, during which teachers are expected to contain their lessons in the various subject matters. The weekly schedule was based on a six-day week, days being designated by the letters of the alphabet, A - F. Thus, one Monday might operate on the "A" schedule and the next Monday would be an "F" day. Curriculum is decided by the Central Administration in Hilton and teachers feel bound to adhere to directives coming from the top. At the start of the project, the reading program was predicated on the use of a basal textbook with accompanying workbooks. Teachers were expected to cluster their students into three homogeneous groups. If they wished to move a student from one group to another, they needed permission to do so from the reading specialist. Teachers were expected to administer Unit Tests from the basals at regular intervals.

Hilton was implementing a process writing approach. The town hired a process writing specialist to serve Grades 4-6 in the fifteen elementary schools. The administration had encouraged the lower grades (1-3) to start a writing program also and had provided some training to these teachers, through isolated workshops given by the process writing specialist.

Special Services at the Spellman School included four peripatetic specialists such as a reading specialist, a speech therapist, a Chapter I teacher, and ESL teachers to serve special needs students. They divided their time among several elementary schools. The principal had responsibilities to two other elementary schools and divided her time among them. The school library is housed in an unappealing large area that is shared with other school activities.

The Spellman School has a transient population; many poor families frequently move from one district to another. Classes never maintain the same number of students for very long. Often a child moves in and out of the school in the same academic year.

Austin School

The Austin School in Waterbury serves approximately 590 students in Grades K-5. Twenty percent of the children are on the free lunch program; twenty percent come from ethnic backgrounds. The ESL program services children from fifteen different language backgrounds.

Teachers at the Austin School had a fair amount of autonomy. They had freedom in choice of materials and in how they ran their classrooms. They had the flexibility to experiment and try different approaches to teaching. For example, two third-grade teachers who decided to team teach combined their classes and were given a double classroom to organize as they pleased. Although most teachers used a basal reading textbook in the Austin School, not everyone followed suit. Children were encouraged to read trade books, and these were made available to them either in the classroom or from the school library. Specialties such as three resource room teachers, Chapter I teachers, speech therapists, ESL teachers and self-contained special education rooms were scheduled for entire grades in one block of time so as to minimize disruption. For example, all third grades had their specialties at 10:30 A.M. every morning. This freed the teachers of that grade for planning or conferencing. It also worked to the advantage of the students in that they did not miss regular class time when they went to the resource room or remediation.

Teachers

Ten teachers participated in the intervention study: one teacher per school in Grades 1, 2, and 3 plus the teacher who team taught the third grade at the Austin School in Waterbury. In each school, the principal played a key role in recruiting participants. We found out well after the project was underway that principals encouraged teachers to participate, and assigned them to the project. As noted before, we focused on the intervention teachers only, in order to maximize our effectiveness.

Table 2 (Teacher Characteristics) presents information on the intervention teachers in terms of number of years of teaching experience, special education training, and preferred approaches to teaching language arts.

As shown in Table 2, seven of the ten intervention teachers had between fifteen and twenty-four years of classroom teaching experience. The range of experience for the other three teachers was between six and fourteen years. Only two teachers had a degree in special education, five had no experience, and three teachers had some experience with special needs students. When asked about their preferred approaches to teaching language arts, three said their main focus had to be on the basic skills, while the other seven preferred to mix basic skills with other approaches.

Except for the third-grade team at Austin, all the teachers were using basal readers as the basis for their reading program. Everyone was using worksheets and workbooks for seatwork assignments. Everyone, except the team teachers, taught basic skills in isolation and everyone organized the reading program around three homogeneous reading groups.

Table 2

CHARACTERISTICS OF TEACHERS

	(N=10)
Years of Experience	
6-14 years	3
15-24 years	7
Special Education Training	
None	5
Some	3
Degree in Special Education	2
Preferred Approaches to Teaching Language Arts	
Basic Skills (BS)	3
Whole Language (WL)	0
Combinations of BS & WL	7

Special Needs Students

We identified potential special needs students based on teacher recommendations, information in permanent records, and IEPs. Our criteria for selection included:

- students who were receiving or who were being considered for receiving special services
- problems in reading and language
- not severely impaired cognitively

Tables 3, 4, and 5 show the number of special needs students and the number of regular education students in each grade by year. As mentioned earlier, we expected to follow the students over a period of 3 years; however, because students shifted and moved around, we were unable to do so.

DATA COLLECTION

Teachers

Over the three years of the project, we collected baseline, ongoing and follow-up data on teachers. Table 6 (Data Collection from Teachers) shows the data we collected on teachers, and Table 7 (Student Data) shows the data we collected from Special Needs Students. Below we discuss each source of data.

Individual Interviews

Overall we conducted three interviews per teacher. The first interview was scheduled at the beginning of Year 1 with all ten teachers. These interviews were meant to gather baseline data about participants' educational experience, teaching experience, attitudes

Table 3

STUDY SAMPLE YEAR 1

Number of Regular Education and Special Education Students in Each Class

Total n = 218
REG n = 168
SPED n = 50

GRADE	Filmore			Waterbury			Hilton			GRAND TOTALS
	REG	SPED	Total	REG	SPED	Total	REG	SPED	Total	
Grade 1	20	4	24	15	7	22	14	5	19	65
Grade 2	19	2	21	14	7	21	13	5	18	60
Grade 3	24	2	26	36	9	45	13	9	22	93
Total	**63**	**8**	**71**	**65**	**23**	**88**	**40**	**19**	**59**	**218**

REG = Regular Education Students
SPED = Special Needs Students

Table 4

STUDY SAMPLE YEAR 2

Number of Regular Education and Special Education Students in Each Class

Total n = 224
REG n = 184
SPED n = 40

GRADE	Filmore			Waterbury			Hilton			GRAND TOTALS
	REG	SPED	Total	REG	SPED	Total	REG	SPED	Total	
Grade 1	19	4	23	15	3	18	22	4	26	67
Grade 2	18	4	22	16	3	19	18	4	22	63
Grade 3	24	6	30	35	8	43	17	4	21	94
Total	**61**	**14**	**75**	**66**	**14**	**80**	**57**	**12**	**69**	**224**

REG = Regular Education Students
SPED = Special Needs Students

Table 5

STUDY SAMPLE YEAR 3

Number of Regular Education and Special Education Students in Each Class

Total n = 258
REG n = 217
SPED n = 41

GRADE	Filmore			Waterbury			Hilton			GRAND TOTALS
	REG	SPED	Total	REG	SPED	Total	REG	SPED	Total	
Grade 1	24	0	24	22	4	26	21	4	25	75
Grade 2	22	2	24	23	4	27	20	9	29	80
Grade 3	26	8	34	36	5	41	23	5	28	103
Total	**72**	**10**	**82**	**81**	**13**	**94**	**64**	**18**	**82**	**258**

REG = Regular Education Students
SPED = Special Needs Students

Table 6

DATA COLLECTION FROM TEACHERS

	TEACHERS
Baseline	
interviews	✓
observation	✓
Ongoing	
annual interviews	✓
observation	✓
workshop evaluation	✓
statement of concern	✓
informal debriefing	✓
Follow-up	
group interviews	✓
individual interviews	✓

Table 7

STUDENT DATA

	Sped	Regular
Baseline		
Language test (TOLD)	✓	
IQ	✓	
SAT	✓	✓
Document collection	✓	
Ongoing		
*Peer Ratings	✓	✓
*Self Ratings	✓	✓
Teacher Ratings	✓	✓
Observations	✓	✓
SATs	✓	✓
Writing samples	✓	
Follow-up		
Writing samples	✓	

* All Students in Year 1, and random sample of six classes each in Years 2 and 3.
Sped = Special Needs Student

towards special needs students in particular, and philosophy about having special needs students in the mainstream.

A second interview was scheduled towards the end of Year 2. We wanted to document change in terms of the teachers' knowledge about language and language development; their beliefs about teaching and learning; and their practices. The questions focused on gathering information on what changes had occurred in teachers' current language arts instruction, what promoted the changes and what they planned to do the following year. These interviews were tailored based on ongoing analysis of the changes taking place in individual teachers.

The third interview was conducted in the final months of Year 3. This was a closing interview, a wrap-up session, to get feedback on the teachers' three-year association with the project. Specifically, we wanted to hear their views about their own changes and to ask about their future directions. We wanted their thoughts about the project's research design and ways in which they thought it could have been different. We were interested in how they felt about the balance between whole language and teaching basic skills. We were curious about whether they perceived the special needs students in a different way, after participation in the project. We wanted to know what they felt about their own administrative support and their sense of its importance. And we wanted them to reflect on their own teaching style.

Interviews were tape recorded with participants' permission, and summaries were written and distributed among EDC staff.

Group Interviews

At the end of the third year, in order to obtain closure, we planned group interviews with the teachers in each site. The three teachers from the Austin School, and two of the teachers from the Regan School met with us to hold group interviews.

Our goal at these informal sessions was to learn more about each site's special characteristics which helped or hindered the study. Because each school's climate and administrative support was different, we wanted the teachers' perceptions about the school. We also wanted their input on how they perceived our intervention strategies. We were also interested in their recommendations for future studies.

Observations

In Year 1, we made periodic visits to all classrooms and observed the teachers during their language arts and reading lessons. The purpose of these observations was to establish a baseline from which we could measure change. We wanted to establish rapport with the teachers and make them feel comfortable with our presence in the classroom. We were focusing on reading, writing, and language arts in general.

We also observed special needs students during these periods if they were in the classroom. Unfortunately, the special needs students were often out during that time, receiving special help in the resource room or with specialists. We took detailed notes during these visits, recording teacher/student interactions, relevant classroom details such as bulletin boards, nature and number of books in the room, display of student writing, learning centers if any.

The field notes were recorded as soon as possible so as not to lose the flavor and context of the lessons observed. Sometimes we recorded our observations in the room as events were unfolding. At other times, it was impractical and disruptive to take notes in class. We then reconstructed the events after the observation period. These field notes were then circulated among EDC staff and are used as the basis for data analysis and developing case histories.

In Years 2 and 3, we continued the observations on a regular basis. The focus continued to be on language arts, reading, and writing. Our activities shifted as we became more involved as trainers but kept the role of the observer. We were interested in seeing if and how changes occurred as a result of the workshops and technical assistance.

Workshop Evaluations

Over the course of three years, we conducted eleven workshops. For each workshop, we developed an evaluation form that would tap teachers' assessment of each aspect of the workshop described in the agenda for the day. Questions were open-ended to allow for maximum feedback. At the end of each workshop, we asked teachers to fill out the form and to make additional comments regarding the nature of the project and their perceptions of the interactions between project staff and themselves, as well as their recommendations for revising content or format, if any. (See Appendix A for Sample Workshop Evaluation).

Statements of Concern

In order to measure changes in teachers' perceptions of the innovation, we periodically asked the teachers to articulate their concerns in writing and we used their responses to plot their acceptance of the innovation over three years.

The Stages of Concern focuses on the concerns of individuals involved in change (Hall, 1987). Research has identified seven kinds of concerns that users, or potential users, of an innovation may have. The seven stages can be organized under three dimensions (Hord et al., 1987):

SELF

Awareness -	I am not concerned about it.
Informational -	I would like to know more about it.
Personal -	How will using it affect me?

TASK

Management - I seem to be spending all my time getting material ready.

IMPACT

Consequence - How is my use affecting kids?
Collaboration - I am concerned about relating what I am doing with what other instructors are doing.
Refocusing - I have some ideas about something that would work even better.

We asked the teachers to fill out open-ended questionnaires (Appendix B) four times during the life of the project: at the end of the first summer institute (June 1989), after the first workshop in Year 2 (November 1989), after the second workshop in Year 2 (January 1990), and after the second summer institute (June 1990).

Informal Debriefing

After each classroom observation we scheduled a time, preferably the same day, with the teacher we had observed for a short debriefing session during which we discussed our perceptions of what we had observed, as well as the teacher's reactions to her own teaching. We often talked about the special needs students in the class and how they fared that particular day. At times the debriefing session was tape-recorded and then transcribed in the field notes. At other times, the contents of the discussion were reconstructed and written up as soon as feasible after the visit.

Special Needs Students

We collected baseline, ongoing, and follow-up data on special needs students from both the intervention classrooms. Table 7 (Student Data) shows what data were obtained.

In Year 1, we collected background data on fifty students in nine classrooms. These students had been identified by their teachers as having learning/language difficulties. We reviewed school records and IEP's to determine whether these students were diagnosed as having language problems and to learn about the nature of these problems.

Diagnostic/Assessment Testing

If language test scores and IQ scores were lacking for these children, we administered the TOLD-2 Primary Test of Language Development and/or the Slosson IQ Test (SIT) in order to have a better understanding of these students' problems.

The TOLD-2 Primary provides an objective and standard means of identifying deficiencies in the many language areas that make up the ability to communicate through speech. As a test of language abilities it is used to identify children whose language deficits may contribute to academic failure, learning disabled students, children requiring bilingual instruction, and in general, children whose language problems or differences might be masked by other more easily observed behaviors (Newcomer and Hammill, 1988).

The Slosson Intelligence Test is a valid, individual, short screening test constructed with items that are similar in nature to the Stanford-Binet tasks. It is recommended for its brevity and ease of scoring and has a remarkably high correlation (r=.979) between the mental age scores for the two tests (Slosson, 1989).

In Years 2 and 3, we followed the same procedures in collecting background data on all incoming students with special needs by reviewing school records and administering the TOLD and SIT tests, as needed. An additional forty-one students were tested in Years 2 and 3, for a total of ninety-one students. We administered Reading and Listening subtests of the Stanford Achievement Tests (Psychological Corporation, 1989) pre and post, to all students in nine classrooms over the three years. We did not duplicate the tests in classrooms where the schools administered their own achievement tests.

Observations

Every time we observed teachers and classrooms we asked teachers to identify the special needs students in the room at the time. We observed these students and noted their activities and behavior. Very often we worked with the students in the experimental class on a group and/or on an individual basis. This was always reported in the field notes.

IEP's

At the beginning of Year 1, with permission from parents, we examined the special needs' permanent records to collect results of relevant psychological and cognitive tests and also to examine Individual Educational Plans (IEP's) if these existed.

Teacher Ratings, Peer Ratings, and Student Self Rating

To measure social integration and self esteem, we administered the three parts of A Process for the Assessment of Effective Student Functioning (Lambert, Hartsough, and Bower, 1979): (1) teacher rating (Pupil Behavior Rating Scale, or PBRS), (2) peer rating (Who Could This Be Game), and (3) student self rating measure (Picture Game). The PBRS is a reference system by which a teacher can rate all her pupils on eleven attributes that describe characteristics important for success in school. The scale ranges from 0.00 to 3.00. Ratings at the high end of the scale for each attribute indicate potential problem behaviors. (See Appendix C for a facsimile of the Group Record Chart and Appendix D for an example of the first attribute.) The Who Could This Be Game has been developed as a means of analyzing, in a systematic and measurable way, how children are perceived by others. The Picture Game is designed to provide a measure of a child's perception of himself. The three measures combined give a good indication of social integration and self-image.

In Year 1, we administered the PBRS to all students in all ten classes. In Years 2 and 3, we administered only the peer and self-esteem subtests to six classes randomly selected. We asked all teachers to fill in the Teacher Rating Scale.

DATA ANALYSIS

Methods of Data Analysis

The data analysis deals with the ten intervention teachers only. Our original intent was to conduct a comparative study, comparing experimental and control classrooms. Midway through Year 1, we decided to abandon this tack and concentrate our efforts on the intervention teachers. As the intervention accelerated, those teachers demanded more intensive support and we decided it was more worthwhile to allocate resources to them. In order to understand the change process, we analyzed our data throughout the three years of the project. The methods we used included:

- analysis of the field notes
- analysis of workshop evaluations
- analysis of Statements of Concern
- individual assessments of each teacher
- case studies of change over time
- timelines of participation in intervention
- Practice Profile

- matrix analysis - comparison across teachers

Below we describe each method.

Field Notes

Our field notes written during direct observations of teachers and classrooms provided a rich source of material for analysis. We circulated them to all members of the research staff as soon as they were transcribed. Each member read and annotated the notes and at regularly scheduled staff meetings we discussed and analyzed their contents according to categories. A set of criteria emerged from on-going analysis. Our main focus of interest was language-based lessons, which included reading, writing, and language arts. We particularly noted teachers' attitudes toward special needs students and comments that indicated a deepening of knowledge, a shift in beliefs, and a change in practices.

Workshop Evaluations

The workshop evaluations formed the basis for the on-going formative evaluation made by the research staff in planning intervention strategies. After each workshop, we analyzed

- teacher's suggestions for future topics
- teacher's concerns about the intervention
- teacher's descriptions of new practices
- teachers' perceptions of the effectiveness of the workshop

We carefully reviewed teacher responses to all items and took them into consideration as we planned our next activities. For example, the enthusiastic response we got from visiting whole language classrooms in Year 2 prompted us to schedule a visit in Year 3 to another school district that was developing a whole language curriculum district-wide. Another example is the mixed response received after the first summer institute. On the first day of the institute, the invited speaker was a university professor who inundated the participants with more information than they could handle. Modifying our strategy, we invited guest presenters who were classroom teachers in the process of changing over to whole language practices. Our teachers felt they could relate much better to other teachers going through that change process. Positive evaluations after this experience stimulated us to continue in this vein.

Statements of Concern

We analyzed the Statements of Concern collected four times over the course of the study. We analyzed concerns across teachers and also in terms of individual teachers to see trends in change over time. We looked for evidence that trends were shifting from concerns about self to concern about students. Appendix E presents a cumulative tally of responses for each level of concern. The statements were interpreted according to the number of times a teacher expressed concerns about herself, management of the task, and impact the innovation had on students (see Appendix F for a fuller description of the Stages of Concern).

Assessment of Teachers

Reviewing and analyzing all available data, we developed a mini-analysis of each teacher which included three parts:

- strengths
- areas of need
- goals

In particular, we focused on teachers' willingness to take risks, to reflect and be analytical about their own teaching, to work collaboratively with peers and the trainers. We discussed contextual constraints such as school procedures regarding reading and writing methods and materials, access to outside resources, and mainstreaming policies. We examined the teachers' existing belief structures and current practices. All of this was taken into consideration in determining a repertoire of facilitative practices that would promote change in individual teachers.

Case Studies

We developed a case study for each intervention teacher to depict change over time. In order to develop these case studies we drew on individual interviews, direct observations, and informal debriefings as our sources of evidence. At first we wrote a simple chronology of events, describing each encounter between ourselves and the teacher. From this chronology, we compared events in Year 1 and in Year 3. Based on the contrasts and similarities we found between these events, we developed a formal case history on teachers demonstrating change over time. (See Appendix G for one sample Case Study.)

Timelines

In the process of analyzing our field notes and developing the case studies, we developed a timeline for each teacher to identify major facets of the intervention and the teachers' participation. Given the geographic dispersement of the sites and the realities of school life, it was not always feasible to establish a regular schedule of meetings with all the teachers at all the sites. Therefore, a visual display of the number and type of encounters we made at each site with each teacher helped us to clarify the dynamics of change. See Appendix H for an example.

Practice Profile

We developed a Practice Profile (Loucks and Crandall, 1982) to identify behaviors that ideally represent a whole language classroom. Based on the literature of whole language (Atwell 1987; Calkins, 1986; Graves, 1983; Routman, 1988; Smith, 1988; Wells, 1986), we identified behaviors and practices that fall within the following five dimensions:

- classroom organization
- instructional process (general)
- instructional process: reading
- instructional process: writing
- independent learning

Appendix I shows in detail how each feature would look in the ideal mode. For each of these dimensions, the staff identified what behaviors/practices would represent an ideal classroom, and what mix of features would be present in an acceptable and unacceptable classroom. We generated charts and lists of features and discussed these among ourselves. For example, our Practice Profile for Classroom Management tries to capture the important aspects of the classroom organization and climate. We rated the teachers on the way they arranged their desks, on their adaptability to form flexible groups, on whether and how they used learning centers, on materials accessibility, on ability to give students autonomy for their own learning, on personal freedom, and on type and amount of print displays. After each class observation, we used the field notes to rate the teacher on a scale ranging from 1-5, from the "ideal" (1) situation, to "acceptable" (3) to "unacceptable" (5) and we included an "overall" rating to summarize our perceptions. The scale represents the spectrum ranging from student-centered to teacher-centered classrooms.

Once the final version was agreed on, we went back to the field notes and rated all the observations on the basis of the criteria developed in the Practice Profile. We then graphed our results showing direction of change for each teacher. This gave us a visual representation of how the teachers changed. Teachers varied in the dimensions of the innovation which they chose to implement, as well as in the extent of implementation along each dimension. Appendix J shows an example of one graph.

Matrix Analysis

In order to summarize our data from our various sources in workable form, we developed a matrix table using the dimensions of the Practice Profile. Along the rows, the table described the behavioral ratings on which we assessed each teacher on the Practice Profile. Along the columns, we listed all the teachers. We then filled in each space with summary statements about each teacher in each category, including examples to substantiate our statements.

Summarizing the data this way provided us a convenient way method for carrying out two kinds of analyses. We were able to compare the teachers on the different dimensions of the Practice Profile because their characteristics were summarized across the chart. Secondly, in looking at the different components of the profile, we were able to compare in which areas large progress had been made versus areas where less change had occurred.

CHAPTER 4: RESULTS

INTRODUCTION

This section presents the results of our analysis. The analysis focused on the ten teachers who participated in our intervention.

The chapter is divided into three sections. The first section documents changes teachers made with respect to practice in terms of

- the organization and climate of the classroom
- reading instruction, and
- writing instruction

In each of these discussions, we talk about what changes took place with respect to the whole class and also with students who have special needs.

The second section presents abbreviated case studies of the intervention teachers to present a more unified view of change. The third section focuses on those factors that promote or hinder teacher change. Here we discuss overall factors and then show how these interact dynamically to create a set of critical factors that promote extensive, moderate, or minimal change.

CHANGES IN PRACTICE

Classroom Organization

Physical Arrangement

Classroom organization involves providing a physical environment that fosters constructivist principles of learning; it involves making high quality materials accessible and suited to the interests of children; it involves immersing the room with a variety of print displays including children's written work, bulletin board displays, poetry books, short stories, and picture books; and it also involves creating management structures that encourage student autonomy and responsibility for their own learning, such as furnishing listening and writing centers.

In the physical make up of the room, desk arrangements are indicative of the locus of control. Desks in rows denote the traditional classroom in which talk is discouraged and the focus of attention is on the teacher at the front of the room. In a whole language classroom, the physical arrangement of the room is organized so that:

- students have individual work space
- there are co-operative group areas
- floor space is allocated for reading quietly
- there is floor space for whole class sharing
- resources are arranged so that children have ready access to them

Table 8 compares the changes in classroom organization observed in all nine classrooms over three years. The table is divided by district (Filmore, Hilton, Waterbury) and by grade. Under each grade we rated the teachers in Year 1 and Year 3 to note changes. A checkmark in the box indicates that a particular aspect of classroom organization is present in the classroom. A blank space denotes its absence. In Year 1, we observed that five of the ten teachers (Mindy, Marilyn, Laura, Ann, and Kim) had their desks in rows; Marilyn said that she kept the desks in rows because it "reduced social interaction". Laura used a U-shape arrangement with several desks placed inside the "U"; this promoted a certain type of intimacy for the whole class since everyone in the class could make eye contact with almost anyone else. The other teachers (Louise, Evelyn, Dorothy,

Table 8

Classroom Organization	School	FILMORE						HILTON						WATERBURY					
	Teacher	MINDY		LAURA		MARILYN		LOUISE		ANN		EVELYN		DOROTHY		KIM		JANICE & PARTNER	
	Year	1	3	1	3	1	3	2	3	1	3	1	3	1	3	1	3	1	3
Physical Arrangement																			
Desks in Rows, single file		√		√		√			√	√						√			
Felxible Arrangement			√		√		√	√			√	√	√	√	√		√	√	√
Material Accessibility																			
Only with teacher permission		√	√	√		√		√		√	√	√				√			
Available but not easily accessible					√				√				√	√			√		
Easily accessible							√								√			√	√
Displays																			
Bulletin Boards and Walls:	Few					√		√	√	√	√								
	Some			√	√		√					√						√	
	Many	√	√										√	√	√	√	√		√
Management Structures																			
Personal Freedom:	Little	√		√		√		√	√	√		√				√			
	Some		√		√						√		√	√			√		
	Much						√								√			√	√
Learning Centers:	Little	√						√	√	√				√					
	Some		√				√				√	√				√	√	√	
	Much												√		√				√
Student Autonomy:	Little	√		√		√		√		√		√				√			
	Some		√		√				√		√		√	√			√		
	Much						√								√			√	√

and Janice) maintained flexible groupings by arranging desks in clusters of four or five; in Janice's room the furniture included round tables with four to six students per table.

By Year 3, the desks in rows had been abandoned by all except Louise, who changed from clusters to desks in rows. Ann had rearranged her desks in clusters of four or five so that students would have opportunities to collaborate with one another. Evelyn, especially keen on developing a climate where peer conferencing would be facilitated, maintained her clusters. In Waterbury, Dorothy, who always had clusters, had rearranged her room with learning centers and a rug area. Kim arranged her desks i clusters of four or five. In addition, after her visit to the Eastwood schools, Kim was so impressed by what she saw that she brought in an area rug for reading and other group activities. Janice and partner, the third-grade team teaching room, maintained the round tables they had over the three years.

Materials Accessibility

Having materials easily accessible to students gives them autonomy. They need not ask for every piece of paper, pencil, crayon, scissors, or glue from the teacher. It also means that they are free to browse in the reading corner, to look at and choose the books they want to read.

In Year 1, we found that the first-grade teacher and the team of third-grade teachers in Waterbury were the only ones who made materials accessible to students. As a team, teachers Janice and partner believed in giving students control of their own learning. The other seven teachers kept control of supplies and doled them out as necessary. If students needed extra paper or to sharpen pencils, they had to ask permission. In the Regan School there seemed to be a perennial shortage of writing paper. Limited funds and the need not to waste paper may have been a possible reason for the shortage.

By Year 3, the situation had considerably changed in two instances, with Dorothy and Marilyn. Although Dorothy had always been generous with materials, she made radical changes that year. The room, visually rich, was designed for the children to have easy access to materials. A special shelf clearly displayed pencils, crayons, and paper labelled for the children' use. In addition, each cluster of desks had a carrier holding crayons, scissors, and pencils. The only place in the room strictly for teacher use was delineated by her desk in the far corner. The change for Marilyn focused on the room library she had built up over the summer before the school year 1990-1991. There were books everywhere, on shelves, in bins, on tables, all accessible to students who wished to browse and borrow books. Three teachers, Laura, Louise and Kim relaxed some of their control over materials. They were more readily available but not always easily accessible to students.

Displays

Displays and room decorations reflect a teacher's personality and aesthetic sensibilities. Rich visual displays of student work connote the importance of that work and the effort that went into it. Commercial displays portray a different message. A room with few displays or merely displays of prescriptive Do's and Don'ts suggests prescriptive behavior and lack of stimulation.

Overall, as shown in Table 8, six teachers showed no change in the bulletin board displays from Year 1 to Year 3. Two teachers (Louise and Ann) began and ended with few displays; one (Laura) had "some" displays in Year 1 and Year 3; and three (Dorothy, Kim and Mindy) had the same amount of rich displays throughout. The other three teachers showed some movement over the three years: two teachers (Evelyn and Janice and partner) changed from having "some" displays to having "many"; one teacher (Maureen) changed from the "few" category to the "some" category.

Qualitatively, the results show change. For example, in both Laura and Kim's classes, although they were rated as showing no change over the three years, their type of display was different. In both cases, Year 1 children's writing showed perfect drafts of uniform stories, usually begun with the same story starters. In Year 3, students' writing in these classes showed more creativity and depth in content. Some even displayed invented spelling.

In Year 1, the rooms in Hilton's Grades 1 and 2 were almost bare of any wall displays. Around the room were alphabet cards, color cards, number cards, a "Happy Birthday" bulletin board with a calendar and names of students whose birthdays occurred in that month. The last month's calendar was still up. The only student work displayed was colored checkered silhouettes of George Washington. There was relatively little decoration at all. This remained unchanged in Year 3.

The picture in Filmore shows more variability. Some rooms were more creatively decorated than others, depending on the teacher's personal characteristics. For example, in Year 1, Marilyn's third-grade room had few bulletin board displays; they were commercial for the most part. Sometimes she would put up some of her student's writing. When asked why she hadn't put up everyone's work for that assignment, her response was that she displayed only "perfect work." In Year 3 her room was more cheerful with more colorful, albeit commercial, displays. She still did not put up student work. Much of the attractiveness of the room came from the many books she had on exhibit on racks, on shelves, and in bins.

On the other hand, Mindy's first grade room in Filmore showed her creativity. In Year 1, the bulletin boards were periodically changed with the seasons and holidays. There was a fair amount of student work on the walls ranging from art work, cellophane snowflakes on the windows, to verbs on construction paper. She had an artistic flair and produced much of the decorations herself, although she made ample use of commercially prepared materials.

By Year 3, the changes made by Mindy reflected her interest in whole language. A coat rack containing at least 50 pages of poems hand copied by Mindy onto easel paper were hung on hangers. Near this area there was a 9'x 9' carpeted area. There were two easels with big books and corresponding multiple smaller copies of the same books propped against them. Close by was a science table. A beautifully teacher-decorated bulletin board contained a "months train." Another bulletin board displayed poems (copied by Mindy).

Management Structures

By management structures we mean the dynamics of the environment which do or do not encourage student autonomy. Establishing learning centers in different parts of the room implies that students may choose, within limits, areas of instruction. A teacher who writes daily or weekly contracts with students implies that she trusts that student to fulfill the terms of that contract, but the student chooses how and in what sequence. Student autonomy, access to learning centers, and the nature of the contracts are directly dependent on the amount of personal freedom teachers are willing to give students to accomplish their daily tasks.

One half the teachers had learning centers in Year 1. Kim and Janice each had an area devoted to science and/or social studies. We rated them as "limited learning center" because they represented physical areas in the classroom; however, they did not function as areas that might encourage self-direction or as opportunities for individualized instruction.

In all classes, personal freedom was curtailed in Year 1 except for limited autonomy in Dorothy's classroom and somewhat greater autonomy in Janice's classrooms. Dorothy said she tried to organize her class to encourage student independence, but in fact we did not observe examples of this. The students in Janice's third grade planned their daily/weekly activities with the teachers and wrote contracts for which they were responsible. Each student had a work basket filled with books and papers which they carried around with them all day long as they moved from one activity to the next.

Students in the other seven classes had little, if any, autonomy or personal freedom. In many of these classes the students had to ask permission to go to the bathroom, were not allowed to walk around the room, and needed permission to sharpen pencils.

In Year 3, we saw some relaxation of the rules in Filmore and Waterbury. Three teachers, Marilyn, Dorothy and Janice, made the greatest strides in giving their students freedom of movement. It was especially dramatic with Marilyn, who was trying to reduce social interaction in Year 1 and now allowed students to move around at will. She now strongly encouraged collaboration among peers and arranged the room so that pairs of students could work together. The students in Dorothy's first grade had their own planning sheets which involved listing requirements and choices for the day. Students were free to do these in any order. It is interesting to note that most students chose to do required work first. Dorothy acted as a facilitator and monitored their daily progress.

Overall, most teachers moved in the direction of increased student autonomy and self-directed learning. Marilyn in Filmore made the greatest leap from a very controlled classroom to an autonomous student-centered classroom. All the other teachers moved incrementally, either from a low to middle rating or a middle to a high rating. Two teachers' (Louise and Janice) management style remained constant, but at different levels. Louise maintained tight control throughout. Her students needed permission to talk, to go to the bathroom, to get materials and to go from one activity to another. Although she had listening and math centers, they were set up as reward for finished seatwork. Her students "are allowed to go to the centers only after they finish their other work."

Janice, on the other hand, always believed that students needed freedom of movement and ought to be able to choose their activities within a given structure. She had learning centers for science, math, and social studies, as well as a reading and writing corner. The difference between Year 1 and Year 3 is that her students seemed to be clearer about how to structure their day and the learning centers were more easily accessible, furbished with relevant materials.

By Year 3, Evelyn, third-grade teacher in Hilton, had philosophically accepted the idea that students need to take control of their own learning and her class devoted two hours a day to learning center activities. Her students collaborated and interacted with each other in the reading, writing, listening, and math centers; however, Evelyn still demonstrated at times that she could not relinquish her authority and sometimes found it difficult to give her students complete responsibility for their learning.

Reading

According to whole language principles, readers construct meaning as they read by interrelating new and old information (Jones, Palincsar, Ogle, and Carr, 1987). Authentic literacy events allow and encourage students to draw upon their prior experience as they make sense of texts written by others. Since understanding depends on our being able to relate new information to what we already know, we must help students develop the conceptual background necessary for reading. Several instructional strategies are available that teachers can easily use to develop background knowledge:

- brainstorming
- providing practical experience
- eliciting prior knowledge
- predicting, confirming, correcting

Brainstorming means drawing attention to what students already know and making them aware of that information. Field trips, hands-on experience, video films, and invited speakers provide practical concrete experiences with background knowledge. Such opportunities help students become familiar with new concepts. Reading itself is another way of building background knowledge. Reading simply written selections on a topic can serve to support students' reading of a more complex passage. Predicting means generating expectations on the basis of information from any available cue system. We confirm our predictions by asking ourselves if what we're reading makes sense. We correct when our expectations are not verified.

Table 9 presents changes in the way reading was taught from Year 1 to Year 3 for the ten intervention teachers. A checkmark in the box indicates that a particular aspect of reading is present in the classroom. A blank space denotes its absence. Although skills instruction in isolation is not part of whole language, a discrete analysis of isolated instructional strategies is a useful way of analyzing change. Therefore, we used characteristics we felt would be indicative of change. They were (1) use of materials, (2) instructional strategies, and (3) assessment.

Materials

In Year 1, reading instruction in two of the districts (Filmore and Hilton) appeared to be the same. They were using basals as the cornerstone of their reading programs. In Waterbury, two teachers, Dorothy and Kim, were also using basals. The team teachers in Waterbury, however, were using trade books as the basis of their reading program. All teachers divided their classes along traditional lines into three homogeneous reading groups. Some of them relied heavily on the teacher's manual for planning and conducting group instruction. Several of them read comprehension questions verbatim from the manual, assigning workbook pages to coordinate with the stories. In four classes (Marilyn, Laura, Ann, Evelyn), students in the reading groups were reading questions and answers from the workbooks during reading time, which left very little

Table 9

Analysis of Reading

	School	FILMORE						HILTON						WATERBURY					
	Teacher	MINDY		LAURA		MARILYN		LOUISE		ANN		EVELYN		DOROTHY		KIM		JANICE & PARTNER	
	TASKS / Year	1	3	1	3	1	3	2	3	1	3	1	3	1	3	1	3	1	3
MATERIALS	Basal Readers	√	√	√	√	√		√	√	√	√	√	√	√		√	√	√•1	
	Teacher Manuals			√		√		√	√	√	√	√	√•1			√•1			
	Workbooks/Worksheets	√		√		√		√	√	√	√	√	√	√		√	√	√•1	
	Big Books		√						√				√		√		√		
	Poetry	√	√								√		√	√	√		√	√	
	Trade Books		√		√		√		√		√		√	√	√		√	√	√
INSTRUCTIONAL STRATEGIES	Homogeneous Groups	√		√	√	√		√	√	√	√	√		√		√	√•1	√	
	Isolated Skills (Phonics)	√		√		√		√	√	√	√	√	√	√		√	√		
	Isolated Skills (Grammar)	√		√	√	√		√	√	√	√	√	√	√		√	√	√	√
	Silent Reading		√		√	√	√	√	√•1		√	√	√		√		√	√	√
	Choral Reading		√				√•2								√				
	Teacher Reading to Class	√	√		√	√	√		√	√	√	√	√	√	√	√	√	√	√
	Thematic Units		√		√		√				√		√		√		√	√	√
	Shared Reading						√								√				√
	Prior Knowledge		√		√		√		√•1		√		√		√		√		√
	Semantic Webbing		√		√		√		√		√		√		√		√		√
	Integrated Content Areas		√				√		√•1		√		√		√		√		√
	Ask Inferential Questions		√		√		√		√•1		√		√		√	√	√	√	√
	Individualized Rdg. Program						√								√			√	√
ASSESS-MENT	Pairing Good Rdrs. w/ Poor Rdrs.	√					√				√		√		√				√
	Top Group Special Treatment	√			√		√		√		√						√		
	Portfolio Assessment						√						√		√		√		√

NOTES:
1- Occasionally
2- With low group only

time to actually read stories. For example, Marilyn relied on two published workbooks for teaching skills: the Ginn Studybook and the Skillpack, and spent reading time going over the exercises for her three groups, including her special needs students. Others used the teacher's manual also, but only as a reference and not as a script for teaching. In the third-grade class where teachers were teaming (Waterbury), only the good readers read trade books, while low achievers used a basal reader. The entire class, regardless of their standing, worked in their workbooks or filled out worksheets.

Language arts consisted in teaching the isolated skills of grammar. Depending on the grade level, we observed lessons taught on capitalization, punctuation, and parts of speech (name words, action words, describing words). Laura in Filmore continued teaching in this vein through Years 2 and 3. Except for the time special needs children were sent to resource rooms, they participated in these lessons.

By Year 3, all the teachers had changed over to a modified whole language approach. This means that in reading, teachers were using thematic units, applying semantic webbing to tap into prior knowledge, engaging in sustained silent reading, and using library books. The materials of reading instruction associated with a whole language classroom include Big Books, trade books, poetry, individual and class stories (tacked on walls or hanging on clothes racks), all readily available to students. By Year 3, some or any combination of these could be found in all nine classes. Only Marilyn abandoned the basal entirely. Laura was still using worksheets, especially for teaching phonics for her low group, but like Mindy and Marilyn, had abandoned these exercises in favor of spending time on process writing. The two first-grade teachers in Filmore and Waterbury both were vested in teaching poetry and had lots of it around.

Waterbury's reading and language curriculum was different from the start. Although in Year 1 basals were used in Grades 1 and 2, they were not visible in Grade 3, where trade books were the norm and students were expected to write or present book reports on a monthly basis. By Year 3, only Grade 2 was using the basal, but only three times a week. The other two days were spent reading children's literature or chapter books. All specialties in Waterbury, including resource room attendance, were held at the same time every morning. In that way, no one was deprived of regular class time.

Instructional Strategies

We define instructional strategies in a whole language classroom to include individual reading, sustained silent reading, choral reading, teacher reading to the class, use of thematic units to engage all the students in a project, and shared reading. In developing reading comprehension, we expect the teachers to elicit prior knowledge, develop semantic webs, integrate reading in all the content areas, and ask inferential questions.

In Year 1, only two of these strategies were seen in more than two classrooms. We observed sustained silent reading in four rooms and reading to children in seven of the nine classes. The third-grade teachers in Waterbury were the only ones using thematic units and integrating reading in all content areas. Both second- and third-grade teachers in Waterbury were adept at asking inferential questions to get at meaning. While Filmore and Hilton segregated the special needs students, Waterbury tried to integrate them in the regular activities. This was made possible because of the school's schedule.

In Year 3, all these strategies, in various combination, were used by some of the teachers. The third grade in Filmore and the first and third grades in Waterbury ran an individual reading program. All ten teachers allotted various amounts of time for silent reading. Louise in Hilton gave her first graders fifteen minutes a week for this activity. The two first-grade teachers in Filmore and Waterbury engaged in choral reading and included special needs students.

Shared reading was done in Marilyn's and Dorothy's rooms. All teachers read to their children. Eight out of ten teachers used thematic units, elicited prior knowledge, developed semantic webs or asked inferential questions at one time or another, except for Louise in Hilton, who used these strategies on occasion. All the teachers in Waterbury and the third-grade teachers in Filmore and Hilton integrated reading in the content areas.

Assessment

Ongoing assessment is a necessary component of whole language. It calls for teachers to be continuously aware of student progress so they can tailor instruction to students' individual needs. In most cases, teachers are aware of their student's strengths and weaknesses through individual conferences, examination of journals, and ongoing assessment of student portfolios. Teachers' differential behavior toward students is almost always indicative of how they perceive their students. This is especially true in their attitude toward special needs students in their rooms; those students were loaded with more phonics and vocabulary worksheets than their classmates.

In Year 1, all the intervention teachers used unit tests to assess student progress. In addition, informal assessment took place on an ongoing basis through story retelling, responses to reading comprehension questions, and in one case (Grade 3 in Waterbury), through book reports that students were required to write after they finished reading their monthly selection.

In Year 3, there were many changes. For example, report cards in Hilton substituted letter grades for written evaluations. The teachers in Hilton felt they were pressured into administering the basal unit tests even though they had partially abandoned the basal and had encouraged their students to read trade books. Evelyn's (Grade 3) response to this demand was to pick and choose stories in the basal which taught the skills needed for the test rather than do every story in the book. She evaluated her students against their own achievement, and like her colleague in Grade 2, didn't particularly worry about chapter unit test results. They were satisfied if students read above grade level. In Waterbury, the intervention teachers in the three grades used student portfolios to assess progress. They all three felt that standardized tests did not reflect what their students knew. As in Hilton, report cards were being revised to reveal changes in philosophy. Dorothy and Kim felt some ambiguities about portfolio assessment. They liked to know "where the kids were" and not knowing made them uncomfortable. They would have liked for someone to come up with a checklist to monitor progress. Realizing the shortcomings of any system, however, they were satisfied to evaluate their students against their own achievements. Kim, in particular, said she used her intuition to assess her students' reading by what and how they were reading and how they responded to comprehension questions. Dorothy remarked that she had learned to see her students in terms of "what they can do," instead of in terms of "what they can't do." This allowed her to treat even her lowest achievers as contributing members of the class.

Like her two colleagues, Janice in Grade 3 used portfolio evaluations to assess student growth as measured against himself. She also evaluated her class against other third-grade classes and found them to be better independent workers, with superior research skills.

Not all teachers changed over to portfolio assessment criteria. Laura in Filmore was not too worried about her students' performance on achievement tests because she continued to work on phonics skills and was teaching phonics on a "need to know basis." She too felt that standardized tests did not reflect what her students knew. Her evaluation relied on how well the students read in class and how well they engaged in oral discussions and on their responses to reading comprehension questions.

Writing

The way teachers teach writing can span the continuum from teacher-centered to student-centered. As the writing process moves closer to being student-centered, it falls in the domain of whole language.

Table 10 presents changes in the way writing was taught from Year 1 to Year 3 for the ten intervention teachers. The teaching of writing changed from a top-down approach, teachers deciding when, what and how long to write, to a bottom-up process, with students taking charge of their own writing. In Year 1, writing as a subject was not universally regarded by our participating teachers as an integral part of the curriculum. Some teachers were setting aside regular periods during the week's schedule to teach writing, while others engaged in writing sporadically. In Hilton, process writing was mandated by the system. These teachers had received minimal training through several in-service workshops. When our project began, the teachers in Hilton were in their third year of process writing. Like all beginners, they felt insecure and tried to follow set procedures they could identify and recognize. They expected their students to brainstorm as a pre-writing exercise, write first drafts, skip lines, use invented spelling, revise their own writing for errors in grammar and punctuation, conference with the teacher, and rewrite their piece as a final draft. Because the school was operating on a "six-day" schedule with regular 40-minute periods (in order to accommodate the specialties), process writing was regularly scheduled once, sometimes twice, every six days. During that period students were expected to start and finish the entire process.

In the other two districts there were no such mandates. The teachers taught writing at their own discretion. One teacher in Waterbury (Kim) liked to teach "creative" writing and found time in her schedule to make it a regular part of the curriculum. The second-grade teacher in Filmore (Laura) also liked to teach writing but could never find a block of time long enough to do so. She saw it as an "extra" activity that took away precious time from reading and math. Her colleague Marilyn (teaching Grade 3) disliked writing

Analysis of Writing

Table 10

School		FILMORE						HILTON						WATERBURY					
Teacher	TASKS	MINDY		LAURA		MARILYN		LOUISE		ANN		EVELYN		DOROTHY		KIM		JANICE & PARTNER	
Year		1	3	1	3	1	3	2	3	1	3	1	3	1	3	1	3	1	3
TOP-DOWN	Assigned topic starters	√		√		√		√	√	√	√			√		√			
	Process finished in one period			√		√		√	√	√				√		√			
	Emphasis on correctness			√		√						√		√		√			
	Conferences for correctness							√	√					√		√			
BOTTOM-UP PROCESS WRITING	Freedom to choose topic								√		√		√		√		√	√	√
	Time to Write—more than 1 period				√		√				√	√	√		√		√	√	√
	Invented spelling allowed				√		√	√	√	√	√		√		√		√		√
	Conferences/elaboration/successive drafts				√		√				√		√		√		√	√	√
	Peer Conferences						√				√		√		√				√
	Writing Center		√										√		√			√	√
	Class Books/Group Writing				√		√	√	√		√		√		√		√		√
	Author's Chair/Sharing writing				√		√	√•1	√•1		√		√		√		√	√	√
	Thematic units/literature				√		√	√•1	√•1		√		√		√		√		√
	Brainstorming/Semantic Webbing				√		√	√	√		√		√		√	√	√	√	√
JOURNALS	Response journals		√		√•1		√•1		√•1				√		√				
	Journals every day												√		√		√		√
	Journals once in a while				√	√			√		√								
ACCEPTANCE OF PROCESS WRITING	Top group privilege only						√	√	√							√			
	Accommodating special needs				√					√	√	√	√	√	√		√	√	√
	Teacher comfort level about writing: Hi, Med, Low			m	m	lo	m	hi	hi	lo	hi	hi	hi	m	m	hi	hi	hi	hi

NOTES:
1- Occasionally

so much that she did not even want to contemplate it as a regular activity. She felt obliged to schedule a writing period on occasion. In each of these cases, writing was completed within one period. The teachers typically gave story starters or suggested topics. Emphasis was placed on grammar, punctuation and correct spelling. Only perfect papers were displayed on bulletin boards.

By Year 3, changes in writing were small and incremental. One by one, teachers included response journals, shared writing, thematic units, and brainstorming as part of instruction. Interestingly enough, when these teachers began with process writing, they tended to concentrate their efforts with the top groups only. The special needs children were mostly ignored. We noticed for example that in two instances (Ann and Laura) special needs students had made very few or no entries in their journals. In both cases the teachers were not even aware of the writing these students had done. When asked about it, they told us that it had not occurred to them to monitor these students more closely than the others because they thought that if the class were told to write in their journals, everybody would do so.

Ann and Evelyn in Hilton and all the teachers in Waterbury became enthusiastic advocates of the writing process. Kim, who had always taught writing as a regular activity, was surprised at how enthusiastic her students had become. Their productivity increased when given greater choices in topic selection and time to write, without worrying about form. Their stories became longer and longer. As these teachers spent more time with writing, their comfort level about letting students write at their own pace rose considerably. As can be seen in Table 10, this is especially true for Dorothy, Kim and Janice in Waterbury, and for Marilyn in Filmore.

All the teachers were uncomfortable about displaying writing samples that weren't "perfect." Every time the issue of invented spelling came up during our workshops (summer 1989, November '89, summer '90) or during debriefings, the teachers as a group argued vehemently against allowing students to bring home misspelled papers. They said that these papers were a reflection of them as professionals and that, as a result, they wouldn't be able to face the parents (and the administrators).

CASES OF CHANGE

Below we present a brief case history of each of the ten teachers (the teachers who teamed are condensed). The purpose of these mini-cases is to provide a more cohesive image of change over time.

Marilyn, Grade 3, the Regan School in Filmore

Marilyn, whose original training was in special education, has been teaching approximately 16 years.

Year 1

Entering Marilyn's room, one was struck by the quiet. Students sat in their seats, in rows, filling in worksheets. Marilyn explained she preferred this arrangement "to reduce social interaction during lesson time." She expected her students to be well-behaved and on task. The room was decorated with some teacher-made and commercial materials, and a few student work papers that demonstrated perfect or corrected work. For much of the day, she sat at the reading table working with reading groups where she used the basal exclusively. Using the Ginn Basal Reading Program (the Reader, Workbook, and Skillpack) with her three homogeneous reading groups, she assigned every story and every page of the two workbooks to each group. In a typical 20-minute reading lesson she spent about ten minutes going over the story, adhering strictly to the script in the teacher's edition. She looked for student responses to the scripted comprehension questions that exactly matched the teacher's manual. The remainder of the reading group time was spent correcting workbook pages. One by one, students were given a chance to read a sentence from the workbook and give the answer. She never asked for clarification, elaboration, or what led to the student's thinking. She said that the reason she followed the teacher's manual so slavishly was because she believed that the "experts knew what they were doing."

There was very little writing in Marilyn's class. When she did have a writing lesson, she used story starters. Students wrote a first draft, then had their papers corrected by Marilyn. She highly valued those papers that had a beginning, middle, and an end. She showed the class examples of what she labeled "acceptable" papers as a way of modeling instruction. She told us she didn't "really like to teach writing," that it was a difficult subject and that she "often could not figure out what to write about."

Change Over Time

We instituted three cycles of planning, co-teaching and debriefing in the spring of the second year. Marilyn was skeptical, worrying about "doing it (writing conferences) wrong" and somehow "ruining the children." She accepted help from the trainers. For example, watching the trainer run a pre-writing brainstorming session, followed by writing conferences, she felt she could do it too. She tried the process on her own, using a problem solving unit; however, she did not follow through and left the topic dangling for weeks before her class picked it up again. By then the initial enthusiasm had worn off. Nevertheless, Marilyn was hooked and asked for more help with writing. By May of Year 2 she had moved the desks around to form clusters, but the walls were still bare and there were few resource materials (library books, trade books) available for students. Reading remained wedded to the basals and the worksheets, but writing had taken on a different character.

Year 3

By Year 3, Marilyn had made some dramatic shifts. She had abandoned the basal in favor of literature, and writing (using a process writing approach) had become an integral part of the curriculum. The change seemed to have occurred after the summer institute which, she said, had stimulated her thinking. The basal reader and its concomitant three reading groups disappeared and all students, regardless of reading level, were reading from the hundreds of trade books bought mostly with her own money. As someone who worked part-time in a bookstore, she carefully selected books that represent classics and good children's literature. However, students with IEP's assigned to resource rooms were the exception.

The desks were arranged in clusters of four or five to "promote collaboration," according to Marilyn. Bulletin boards began to include more of the children's original work. For example, a class story about the moon was displayed on the wall with edits in the form of crossed-out words and insertions with arrows. There was a listening center in one corner of the room, equipped with headphones and tapes of children's books. The reading table was gone and a rug had taken its place. The students were engaged in a variety of tasks: some read books alone or in pairs; some talked to one another; and some wrote stories. Students were encouraged to make their own reading selection. Time was set aside daily for silent reading. Many of the book-sharing activities took place on the rug, Marilyn sitting cross-legged with a group of students (reading at different levels) surrounding her. During these informal times, Marilyn engaged students in discussions, elaborated on their responses, and pushed them to think about what they had read. Her comprehension questions were conversational, open-ended, and invited discussion. Skills practice was integrated during reading time. More time for writing was gradually becoming a part of the curriculum; however, Marilyn's energy for change was focused mostly on reading.

Dorothy, Grade 1, the Austin School in Waterbury

Dorothy, the youngest teacher participating in the study, had six years' experience teaching first grade when we first met her.

Year 1

In Year 1, Dorothy's room gave off mixed signals. Desks were arranged in clusters; every inch of wall was filled with art work, murals, creative writing, poetry, and educational posters. There were lots of trade books on display and the general atmosphere was one in which one felt that this was a creative, exciting classroom. Yet despite the fact that she saw her classroom as student-centered, it became clear that Dorothy was teacher-directed and maintained close control over her students' activities. She was strongly committed to teaching a phonics first approach and put a great emphasis on basic skills, using Modern Curriculum Press Phonics and Riverside Phonics workbooks. She ran four reading groups, using the stories in the basal reader for their structure and controlled vocabulary. Most of the phonics activities consisted of drill and review, with twenty minutes a day being devoted to filling in worksheets. But in addition to the basal, she also used trade books. She encouraged students to read on their own and allowed ten minutes a day for that activity. She also scheduled twenty minutes a day for writing, using story starters to help students generate ideas. She said she wanted her students to "feel like readers and writers," writing notes to each other or writing their own stories. She tried to model literacy by pointing to problems in her own writing. She called herself "eclectic" because her students read other books besides basals and she read to her class about fifteen minutes a day (e.g., Charlotte's Web). Worrying about her special needs students, she allotted time for pairing low readers with good readers so they could read aloud to each other.

Change Over Time

Dorothy was keen on having trainers come in to plan and co-teach model lessons and willingly gave up her free time for planning. She continued to be concerned about her low achieving students and persisted in giving them phonics drills and worksheets to do. Her middle and top groups were given more freedom and encouraged to work independently. They were allowed to read trade books when seatwork was finished and allowed to talk with each other in normal tones. The first planning and co-teaching cycle focused on helping all students in the class to interview one another. In this activity Dorothy and the trainer worked together, taking turns, teaching and observing each other. This allowed them to analyze each other's teaching style and identify areas that could be improved. A subsequent collaborative cycle focused on developing timelines based on students' experiences.

Year 3

The room continued to be visually rich, designed for easy access of materials for children. There were mailboxes labelled with each child's name for messages and finished work; learning centers for math and science; a writing center; a reading corner; a library with Big Books and bins of books labelled by subject; a listening center equipped with tapes and books; a rug area for meetings and story time; and a calendar and message of the day board. There were also a rug area with a new collection of blocks, and a shelf with clearly displayed pencils, crayons and paper, labelled for children's use. Each cluster of tables had a carrier holding crayons, scissors, and pencils.

Children were still grouped homogeneously in three groups, but met only a couple of times a week for skills mini-lessons. Basals were eliminated and each student could independently choose his own books. Dorothy carefully monitored each student through daily contracts. Contracts were written so that they included required work for each student, but also gave students choices about what they wanted to read and in what sequence they expected to finish their work. As the year progressed, students were increasingly using response journals and message boards to convey meaning in print. Dorothy was incorporating more writing in the subject areas such as science, social studies, and reading. Each child had a response journal in which he made his daily entries. The bulk of learning was structured to be student-initiated, except for skill-based lessons.

Janice (with Partner), Grade 3, the Austin School in Waterbury

Janice was an experienced teacher who had taught kindergarten (1 year), first grade (9 years), fifth grade (1 year), and third grade (9 years). As the mother of a deaf child, she was very sensitive to language issues and to the needs of special needs students and mainstreaming. In Years 1 and 2, she teamed with Sally to teach 45 students, and teamed with Meg (35 students) in Year 3 when Sally left. The case focuses mostly on Janice and her team teachers.

Year 1

In Year 1, the room was stimulating but also noisy. Instead of desks, there were nine round tables scattered about the room, with an occasional individual desk set apart from the tables for students who were better off isolated from the groups. Students were free to talk and walk at will. There were no quiet corners set up for students to retreat, even though the classroom was double-sized. Students worked on their own, in groups, or with one of the teachers. Bookshelves were filled with all sorts of materials: trade books, dictionaries, reading skills books, and "getting to know your library" books. Each student had a work basket filled with books and papers which they carried as they moved from one learning center to another. Students had a weekly contract, but those who needed to be monitored more closely had a daily one. Individual conferences were scheduled with students to monitor their work.

Janice and her team teacher did not use basal readers. They felt secure that all the requirements of the curriculum were being met without basals. In language arts, students worked on daily class stories and on isolated skills in workbooks, with an emphasis on grammar. Many lessons were focused on writing neatly, ending sentences with periods, knowing parts of speech, and spelling words correctly. The teachers tried to individualize the program by giving appropriate worksheets to students who needed them (e.g., capitalization); however, Janice often said she didn't like to teach skills in isolation and wished there were a better way. Special needs students seemed to be lost in this room. Sometimes the noise level was unacceptably high. The large space (a double room with open curtain) and the number of people using it seemed to be distracting to special needs students who would need a more structured environment. Nothing was clearly labeled. Often, as we sat in the back of the room during observation, we had difficulty hearing what the teacher, at the front of the room, was saying to the whole class. Although they professed to individualize instruction, the two teachers often planned lessons for the whole class, sometimes forgetting that they were dealing with a broad spectrum of student abilities. Their enthusiasm during a lesson sometimes caused them to think of related concepts and materials that were much beyond the special needs students' abilities to comprehend. As a team, they took turns teaching, dividing responsibilities for content areas between themselves. This sometimes resulted in one teacher teaching the whole class while the other one corrected papers or planned her lesson.

Change Over Time

In response to the team's request, we concentrated on integrating special needs students in a very large class with open-ended structure. After several cycles of planning and co-teaching, focusing on special needs, Janice and her team teacher acknowledged the need to design writing and reading lessons that would allow all students to participate. They were excited about activities that would elicit prior knowledge, help students generate ideas for writing, and use semantic webs. Trainers and team members found ways for special needs students to work constructively with peers in small groups. The teachers, interested in thematic units, began to link language, writing, math, and social studies. After co-constructing and teaching a unit with the trainer, Janice was impressed with the way some special needs students responded to the trainer during a reading and writing activity. It paved the way for a change in both teachers' perception of what special needs students were capable of doing.

Year 3

By Year 3, Janice and her team teacher were quickly moving in the direction of whole language. With fewer children in the classroom, they seemed better able to organize and manage student directed instruction. Students were expected to read a minimum of one book a month independently. If they read more than one, this was recorded on a class chart. In addition, several groups formed themselves according to interest: groups were formed for purposes of reading and discussing a particular book, and then they disbanded. Not all students read with a group. Not all groups were homogeneous. For example, two special needs students who wanted to read Stone Fox joined the group who was reading it, even though the book was above their reading level. Sometimes groups were formed for the purpose of improving social skills and working together.

In addition, there were class projects in which everyone participated. For example, wanting to teach idiomatic expressions and the importance of clear communication, Janice and partner lit upon the theme used in Amelia Bedelia books -- homographs. Everyone read a book in the series. The class then banded together to collaboratively write "Amelia Bedelia Goes to a Halloween Party," interjected with misunderstood idiomatic expressions to lend it authenticity. It was eventually illustrated and published as a class effort. Journal writing and story writing became an integral part of the curriculum. Students wrote individual stories, elaborating and editing as many draft copies as necessary before publishing for display.

Kim, Grade 2, the Austin School in Waterbury

Kim has taught for twenty-four years, at the elementary level in kindergarten and first grade, but she preferred second grade.

Year 1

The students' desks were arranged in three rows facing the board. Students moved around only with permission. Each day Kim listed work requirements (e.g., workbook pages, assigned writing topic) on the blackboard. Students worked independently while Kim was working with one of her three reading groups in basal readers. Most reading was oral. Pleasure reading, or silent reading, occurred only when all assigned work was completed. She asked comprehension questions quickly and demanded equally rapid responses. When working with her top and middle groups, she often challenged children to elaborate ideas and make links between reading and real life. At the end of the year, the top group was allowed to read from trade books. Instruction for special needs students focused on skill building, while middle and top groups concentrated on concepts.

Kim's room was always decorated with children's writing. She said she loved to teach creative writing and scheduled regular periods of the week for that activity. Children's writing was displayed on bulletin boards, on the walls, strung on clothes lines, and outside the classroom in the school corridor. The topics were seasonal. The stories often began with story starters. A typical writing period would be introduced with a topic that had been elaborated upon in order to give students ideas on what to write about. Sometimes Kim read a story to the class; sometimes a field trip would occasion the writing. Together with her students, she brainstormed ideas and then had them write a first draft. Following that, students lined up for Kim to correct their spelling and edit sentences so that they made sense. Next, students copied the corrected draft into final form, which would then be proudly displayed in the room.

Change Over Time

Although Kim had not volunteered for the project, she was nevertheless an enthusiastic participant and was willing to learn new strategies for teaching. She said she did not always agree with the philosophy of whole language but wanted to pick and choose ideas which she would adapt to her own style. By Year 2, she had begun to adapt some of the strategies learned during the workshops. At her request, trainers helped her with book publishing and book binding. She intended to do this with her top group only. She felt that the low group could not afford to spend time publishing since they hadn't the necessary skills to write anything, let alone a book. However, we suggested that she include her low readers in these activities. Kim was amazed at the results and became more willing to move to a whole language approach. Although the reading program in Year 2 remained traditional, based on three homogeneous reading groups and grounded in the basal, Kim became aware of the interrelation between reading and writing. Her special needs students were writing more and able to read back what they wrote. Our trainer helped Kim develop more elaborate writing conference strategies, focusing on content rather than form. But Kim was not willing to let go of form. Spelling and grammar were important to her and she insisted on maintaining her standards. She talked openly during debriefing and became more introspective and reflective over time. (And even said she enjoyed it.)

Year 3

Kim had changed the configuration of desks, putting them in clusters to form "tables." Now students were free to move around the room at will within bounds. Journals, thematic units, process writing, and semantic webbing for eliciting prior knowledge were a regular part of instruction. Kim brought a carpet from her home to school which she used when she read aloud to students, or when students shared their writing with the whole class.

In response to Kim's request to focus on writing and literature-based reading units, we spent four cycles of planning, co-teaching, and debriefing. On three days a week, the morning routine was similar to Year 1: Kim conducted reading groups while the children completed assigned seatwork. The other two days, however, morning language time was devoted to "other things." The block of time (approximately 90 minutes) that would otherwise have been devoted to reading groups and seat work, was now given over to independent learning activities. This time was used to allow students to research specific topics of their own choice through books or by way of videos and filmstrips, to write individual or group stories, to read, or to illustrate their stories. Kim explained that now reading instruction no longer occurred only during reading group time. Instead reading was integrated with writing within thematic units. Overall, she was successful and pleased with the results and commented, "...they can't wait to get back from recess so they can work on their books again. One person's got nine pages, all off the top of her head." It was especially gratifying to Kim that the special needs students were as prolific as the others, and were feeling as successful. She originally had fewer expectations for these students and gave them different assignments. Now, twice a week, special needs children participated in the same learning activities as the rest of the class. She elicited more prior knowledge from them, as if she had begun to realize that special needs were not "empty vessels" but had much to contribute. "I love being in the project," she said. "It has exposed me to things I wouldn't have been exposed to otherwise ....and I've had to do things that I wouldn't have been doing otherwise..." Kim still taught skills, but on an individual, as-needed basis, usually in the context of reviewing a student's writing.

Evelyn, Grade 3, the Spellman school in Hilton

Evelyn has 22 years experience teaching elementary grades.

Year 1

In Year 1, Evelyn's classroom appeared bright and attractive. She grouped student desks together in clusters because, she said, it was good for group work and "allows kids to help each other." She displayed her students' finished writing product. Though there were many reading and trade books in the room, they were placed behind her desk, not readily available to students. She had no learning centers but would have liked to set these up. Process writing had been part of the curriculum for the past three years, as mandated by the system, and took place three days out of a six-day weekly cycle. Most of the time, her students were at different stages of writing, completing a self-editing checklist before scheduling a conference with Evelyn. Acting on a suggestion by the writing specialist, she had begun to use literature to motivate writing.

In contrast to writing, reading was taught out of the basals. The class was divided into three homogeneous reading groups. Following school policy, Evelyn had every child use a basal reader at, or below, his grade level. No child could be reading from a basal which was above his grade level. Even though bound to the basals, however, she tried to tie literature, writing, and basal stories around a theme. For example, tired of having students write stories about topics listed on the chalkboard, she used literature to motivate them by reading Dahl's Fantastic Mr. Fox to the class. She then asked them to discuss and write about somebody they knew, or had read about, who was fantastic, or who "got caught." She was delighted by the results. She read to the class one period a week; most reading was done silently, except for the lowest reading group. Taking suggestions from the workshops, she tried to elicit prior knowledge and to generate semantic webs. She liked the results, which provoked animated discussions in her reading groups; however, she was under the misapprehension that these techniques took away time from the basic skills as directed by the teacher's manual and the workbook pages. She was particularly worried about her students' performance on unit tests, but she was willing to experiment and expressed a desire to learn more about how to integrate and interrelate the content area subjects, to connect content to children's experience, and to make subjects more interesting for students and for herself. She said she wished she could "throw out the basals" because she was so bored with them and found the teacher's manual uninspiring. She was responsive to her school's administrative demands, however.

Change Over Time

By Year 2, Evelyn asked for help in setting up learning centers and to be shown how to "transform my classroom" at a much slower pace. She began to apply whole language strategies to lessons in language arts. In tentative ways she allowed and encouraged students to engage in learning activities orchestrated but not conducted by her. She was pleasantly surprised that the techniques worked but was still not comfortable with her role as facilitator. She used the teacher's manual as a basis for questions but did not rely on it totally. She allowed children to connect stories to personal experience but did not actively encourage elaboration. Little by little, Evelyn increased the amount of time she allowed for discussion and sharing of personal experiences by students. She collaborated with the second grade teacher on developing a Dream Unit based on children's literature from one of the project's workshops. During some of our visits, however, she ran a traditional classroom.

Evelyn worried about the special needs students in her room. When working with them, she focused on basic skills, mostly in isolation and with worksheets. During writing activities, however, these students were not treated any differently from the others. She remarked that "the beauty of the writing process is that everybody writes and everybody has something to say. There is no wrong or right."

Year 3

By Year 3, Evelyn had decided not to order workbooks and to use the funds instead to buy more trade books. Students now had more autonomy as evidenced by the proliferation of learning centers where students spent up to two hours a day. In writing, she stressed the importance of peer conferences, noting that students paid more attention to corrections made by peers than those made by the teacher. System-wide, the Coordinator of Language Arts had begun to talk about abandoning the basal readers, and not requiring unit tests. Concomitantly, the three reading groups were dissolved and

Evelyn began experimenting with letting children work together on books based on interest. She integrated social studies with reading and writing and tried to teach more math in context. She continued to collaborate with a colleague, expanding on the Dream Unit.

Laura, Grade 2, the Regan School in Filmore

Laura taught second grade for approximately twenty years.

Year 1

Laura's classroom was organized along traditional lines, desks arranged in three horizontal rows facing the blackboard. Bulletin boards were decorated with multi-colored teacher-made materials based on language arts lessons. For example, charts on grammar included several called "Search for Verbs," "Things I See," "Things I Do," "Things I Hear," and "Things I Feel." Conversation among students was discouraged. Laura fastidiously used the basal, teacher's manual, and workbooks with her three homogeneous reading groups. Language arts consisted of teaching grammar, including punctuation, parts of speech, capitalization, contractions, and possessives. Spelling was taught on a daily basis. While Laura worked with one reading group, the other students were expected to remain at their seats and complete assignments that had been written on the board for each group separately. Writing was an integral part of the language arts curriculum. Stories were suggested by Laura through story starters or as group activities. Usually Laura read a story to her students and then asked leading questions which would then be incorporated in the story. She stressed legible handwriting, as well as rules of grammar such as capitalization and punctuation.

Change Over Time

Asked to state her concerns in Year 2, Laura said, "I do not really feel any concerns -- I just hope I am making enough modifications. Trying new methods is not easy for me. But I really like the new methods and am trying to incorporate them as much as I can, time-wise." As a result of the workshop on children's literature on thematic units, she requested help in developing a Friendship Unit as a way of introducing process writing in her classroom. Taking into account Laura's teaching style, we helped her develop a modified writing process. Because she was not ready to give her students autonomy, we generated several class lessons limited to well-defined time periods. In the first cycle of co-planning, teaching, and debriefing, the trainer, with Laura, talked about friendship, read a book to the class, brainstormed ideas, and had the students write a first draft. The trainer suggested that the adults in the room write together with the students. This proved to be the catalyst for change. For the first time, students were writing freely without paying attention to capitalization and spelling. Laura said, during the debriefing, that it was a revelation that her students could concentrate on their own for a period as long as twenty minutes. Subsequent cycles of technical assistance included help with conferencing, which Laura found difficult to do on her own. Her main concern was that it took so much time away from her other curricular obligations. She was delighted with the results, however, and slowly increased writing time in the week's activities.

Even though the basal reader formed the foundation of Laura's reading program, she allowed herself to experiment somewhat with the top group. In Year 1, all her students read orally, round robin fashion, and then answered scripted comprehension questions; by Year 2 Laura was eliciting prior knowledge from the group before tackling a new story and generating semantic webs through brainstorming sessions. Then she had her students read silently before starting a general discussion about the story. She maintained her traditional ways with the middle and low groups.

Year 3

By the end of Year 3, Laura was moving in the direction of using chapter books with the top group only. The top group had finished their basal reader by springtime, and Laura felt secure enough at that point to give these students some latitude. She had purchased multiple copies of chapter books and given the students permission to choose any book they wanted to read. She did not feel she could do the same with the middle and low groups. She felt very strongly that she needed to "cover" all the skills for these two groups, as presented in the basal, but did not necessarily feel it had to come from the workbooks. Laura abandoned workbooks for all groups and used semantic webbing and brainstorming as a strategy to develop prior knowledge. This helped students get excited about what they read and made writing more open-ended. Although there were still defined writing periods, students were given more autonomy about their choice of topic; they wrote and published books and wrote in journals twice a week. Student desks were arranged in clusters in order to promote group projects.

Ann, Grade 2, the Spellman School in Hilton

Ann has 23 years of teaching experience, a Masters in Reading, and is certified as a Reading Specialist and Reading Supervisor.

Year 1

Ann's room, sparsely decorated, had a barren feel to it. Desks were arranged in rows, facing the board. There were no student papers on the walls. The only decorations were commercially prepared posters on Colors, Numbers, and "Nine Steps for Studying Spelling Words." In one corner, on a desk, there were some trade books. Honoring a request for a listening center, project staff arranged for the school administration to provide a tape recorder with headsets and tapes. The class was divided into three homogeneous reading groups, used basal readers. Reading time was devoted to reviewing workbook pages, with Ann calling on the students, one by one, to read answers. She relied heavily on the teacher's manual because it was a new basal and she was not acquainted with it. Although she expressed a desire for new materials, such as Big Books and a listening center, and said she was "tired of workbooks and seatwork," her comments and behavior indicated that she did not grasp the philosophy of a constructivist approach. For example, after the second workshop which demonstrated how to brainstorm, elicit prior knowledge and develop a semantic web about a monster story, Ann didn't understand how she could apply these techniques to stories from her own basal. She said, "The thing with the lines and the monster...is generally not very useful because the children don't have the prior knowledge...they are Puerto Ricans or Portuguese..." Because writing was mandated, Ann used process writing as her methodology. But as with eliciting prior knowledge, she followed the steps of process writing without understanding its underlying philosophy. She focused on having students skip lines so that they could edit their work later on, more than on the substance of what they wrote. Overall, Ann's relationship with her students could be characterized as distant. Her tone and manner lacked warmth.

Change Over Time

In working with the trainers, Ann asked for "recipes of what to do," and was willing to comply. To be responsive to her request, we offered to do a demonstration lesson, introducing and reading a picture book, Strega Nona (with accompanying tape). Ann felt that this would also be a good transition to reading chapter books because this story was longer than the stories she usually read to the class. As the book was being introduced by the trainer, Ann suggested that the children move close together in a circle. This was a first for Ann. Later, during debriefing, she acknowledged that the trainer's pre-reading discussion, eliciting of prior knowledge, and development of semantic web had gone well, but that she, Ann, would never do as much discussion before reading because it took too much time. Yet, in a follow-up discussion, Ann volunteered that many students, including one of the special needs students, had gone to the listening center to hear the story again and that many of them had drawn illustrations and added narrative to the story.

Most changes occurred in the area of writing, not reading (where Ann had continued to use the basal in the same manner as before). In writing, she tried new strategies by sharing her own Thanksgiving experiences with the class and asking students to verbally share their day with classmates. She experimented with peer conferences after one of our workshops offered concrete strategies. In reading, she willingly accepted suggestions on integrating special needs children by pairing a good reader with a low reader. She improved the listening center by purchasing new tapes and a set of easy readers to accompany them. Yet, in spite of the changes, her emphasis remained on product and not process. Discussions continued to be teacher-centered, with little student autonomy.

Year 3

Ann rearranged the desks in a slightly different way. There were three clusters, one table of six desks, one table of eight desks, and one horizontal row of five desks. She said her reason for the rearrangement was so that children could help each other. The listening center now had two tape recorders, headphones, and a few tapes. There were multiple copies of one book going along with the tape. The other rear corner of the classroom contained the class computer. There did not appear to be any classroom library except for one small revolving paperback book rack with a few books. There were still few displays in Ann's room, and no student drawings or writing papers. The only student papers posted were one set of spelling and one set of phonics papers. Other displays of print were commercially made posters of alphabet letters, shapes, words, U.S. coins.

Overall, there were some positive signs of change. Ann seemed to be warmer and more relaxed than in previous years. Writing had become much more important and she devoted more time to it, allowing peer conferences, and being much more concerned about substance. There were still many problem areas, however. Although she had instituted journal writing in her class, she was not aware that her special needs students had made fewer entries than the other students. She did elicit responses from her students but was inconsistent when it came to elaborating on them. Sometimes her directions were incomplete and instructions fragmented, leaving off key words. She was consciously aware of the need to elicit prior knowledge, but sometimes seemed to link unrelated activities without rationale.

Louise, Grade 1, the Spellman School in Hilton

Louise had four years' teaching experience. Before getting teacher certification, she worked as a teacher's aide in a resource room. She took master's level courses in writing. Louise entered the project in Year 2, taking the place of another teacher who left after the first year.

Year 2

Louise's room was organized as though to promote student-centered learning, with desks arranged in clusters of three, four, and five. Bulletin boards were teacher-decorated. A teacher-made sign explained the students' work. It read, "We are reading the short novel - Ralph and the Motorcycle - what is the setting?" She read to her class a chapter a day from one book. In one corner of the room, there was a rocking chair, some books, and a few stuffed animals. In another section of the room, there were eight books propped up against the chalkboard. A shelf in the back of the room, well above the children's reach, was labeled "science center." Yet, in spite of all the materials and decorations, the room had a sparse feel to it, perhaps because the classroom was large. The one set of student papers on display (all pictures, no writing) were hung on a clothesline and yet the walls had lots of blank space. Reading was done in homogeneous groups out of a basal reader. Louise relied heavily on the teacher's manual for instruction and used workbooks on a regular basis for the purpose of drill and practice in phonics. While she taught one reading group, other students were busily engaged working independently in a number of different centers. There was a listening center, an author's corner for writing, a computer, and a painting corner. Writing was done, from beginning to end, in a forty-minute period to conform with the school schedule. She tried to link writing with literature but found it difficult to fit the entire process in that one period. Thus, she read a book to the class, called a child up to the author's chair, asked him what the main idea of his story was going to be, asked him if it was going to be fiction or non-fiction, and then invited the class to ask the "author" some questions. Because of time limitations there was at most time for three children to be questioned in this fashion.

Change Over Time

Louise agreed several times to have a trainer plan and co-teach lessons with her; however, she found it difficult to schedule visits with project staff. She was not willing to plan or debrief during prep times, lunch time, or after school. As a result, there was never enough time for planning and even less time for debriefing. Louise was under the impression that training would be limited to demonstration lessons and had not had the preparation in Year 1 for the type of training which included planning, co-teaching, and debriefing, a more promising course, in the long run, than demonstrations.

Year 3

In Year 3, Linda expressed more reluctance to participate, thereby limiting observation and training opportunities. She continued to have learning centers, but had changed her desks from clusters to rows. Reading and writing were not very different from what we had observed the previous year. She had added response journals as an occasional activity and seemed to allow more freedom of choice of topic in writing. Asked if she felt she had changed in the last two years, she said that yes, she had changed but that it wasn't entirely due to her association with the project but rather was a result of the in-service training and courses she was taking outside the project.

Mindy, Grade 1, the Regan School in Filmore

Mindy, a veteran teacher with nineteen years of experience, has certification in special education and has taught kindergarten in the past.

Year 1

Mindy's room was beautifully decorated with print and teacher-made materials, many purchased with her own money. The desks, arranged in rows, faced front. She said she used to have desks in clusters because that is how she did it in kindergarten, but when the custodian asked her to put desks in rows, she conformed. There was a rug area, however, a reading corner, and learning centers for listening and math. She used a basal and workbooks almost every day but supplemented them by having students read individual stories and reading aloud a chapter book day-by-day. Children in all reading groups read orally daily. In the top group, students took turns reading paragraphs; in the low group, they read single sentences. Mindy characterized the method she used for teaching language arts by saying, "I believe I use a whole language approach which needs refining and training. Basic skills are necessary--whole language can be used to teach these. I like to interrelate everything." Asked if she would like to see some changes (in the way she teaches language arts), she said, "Everything can improve. Your training will help with this."

Change Over Time

Although Mindy's attitude toward the training became less positive, given her high level of professionalism, she remained in the project. Her comments revealed that she had mixed feelings about change. On one hand, she said she was unwilling to change. On the other hand, she insisted that she was using different aspects of whole language in her classroom, but that she was doing it according to her views and at her own pace. She attended all the workshops and allowed trainers to observe her classroom, but would not agree to collaborate with them for planning and co-teaching cycles. It became increasingly difficult to observe her class and we relied on interviews for documenting any changes she said she had established. For example, when we suggested we would come into her room to help the low achievers with writing, she agreed to it but established beforehand that she would not follow up because "I don't do writing." During one of the few observations she permitted, we observed Mindy reading aloud Georgie's Halloween Ghost. Before reading, she had the children brainstorm Halloween words and categorize these as either "live" or not "live." Mindy put each word in the appropriate column on a large chart. As she was about to read the story, she asked the children to count the number of times the word "Halloween" came up. Mindy was making an effort to use prereading activities in ways she had not done the previous year; however, it seemed it would be hard to count the number of times a word appears and concentrate on the story at the same time. At least in this case it seemed that Mindy was using the trappings of whole language without really grasping its essence. We noted inconsistencies in her attitude toward her students during our visit. Sometimes she was friendly and engaging, sitting on the floor and helping a child with his reading; at other times, she was cold and distant, bending over a child from behind and avoiding eye contact.

Year 3

Mindy became even more reluctant to participate in Year 3. She said she felt that the staff was intrusive and imposed demands she was not prepared to meet. By Year 3, she refused project staff access to her room on any regular basis. Mindy said, however, she was deeply interested in whole language and took graduate level courses. We noted, during our few observations, that the desks were in clusters and there were several portable carriers for language arts stories. Mindy seemed to use a lot of poetry as an instructional tool, displaying them in profusion on easels and on charts. Because her room contained Big Books plus multiple copies of the smaller versions for each one, we assumed that they were used on a regular basis. We also assumed that because she had a carpeted area, a bean bag chair, reading, listening, and science centers, as well as a small library corner with books, that these areas were used in ways consistent with whole language objectives. Mindy reported that she used the basal reader in addition to Big Books, poetry, and trade books. She also reported that she used daily response journal, did silent reading, choral reading, and read to the class. She said that her instructional strategies included eliciting prior knowledge, brainstorming, and developing semantic webs, and that she asked inferential questions whenever possible or relevant.

FACTORS PROMOTING TEACHER CHANGE

All ten teachers participating in the intervention changed in some way with regard to their knowledge, beliefs, and practice. Four teachers (Marilyn, Dorothy, and Janice and her partner) exhibited change that we rate as being extensive; three teachers exhibited moderate change (Kim, Evelyn, and Laura), and three teachers (Ann, Louise, and Mindy) exhibited minimal change. Our definition of extensive change is that the teacher made a fundamental paradigm shift. Her changed practices in language arts reveal expanded knowledge and a shift in beliefs that embrace a constructivist philosophy. A teacher who exhibits moderate change is in a transitional mode, still holding on to prior beliefs and practices as she is stretching to feel comfortable in a new but increasingly less foreign terrain. Teachers who have made minimal change have basically held on to existing beliefs while intermittently trying new materials or practices.

This section has three parts. First, we discuss three sets of factors (teacher, intervention, and contextual) that affect the change process. Second, we identify a set of critical factors (dissonance, chemistry, individualization, coalescing) that results from the interaction of the teacher, intervention, and contextual factors. In the third section, we show how these critical factors contribute to extensive, moderate, or minimal change on the part of teachers.

Three Sets of Factors

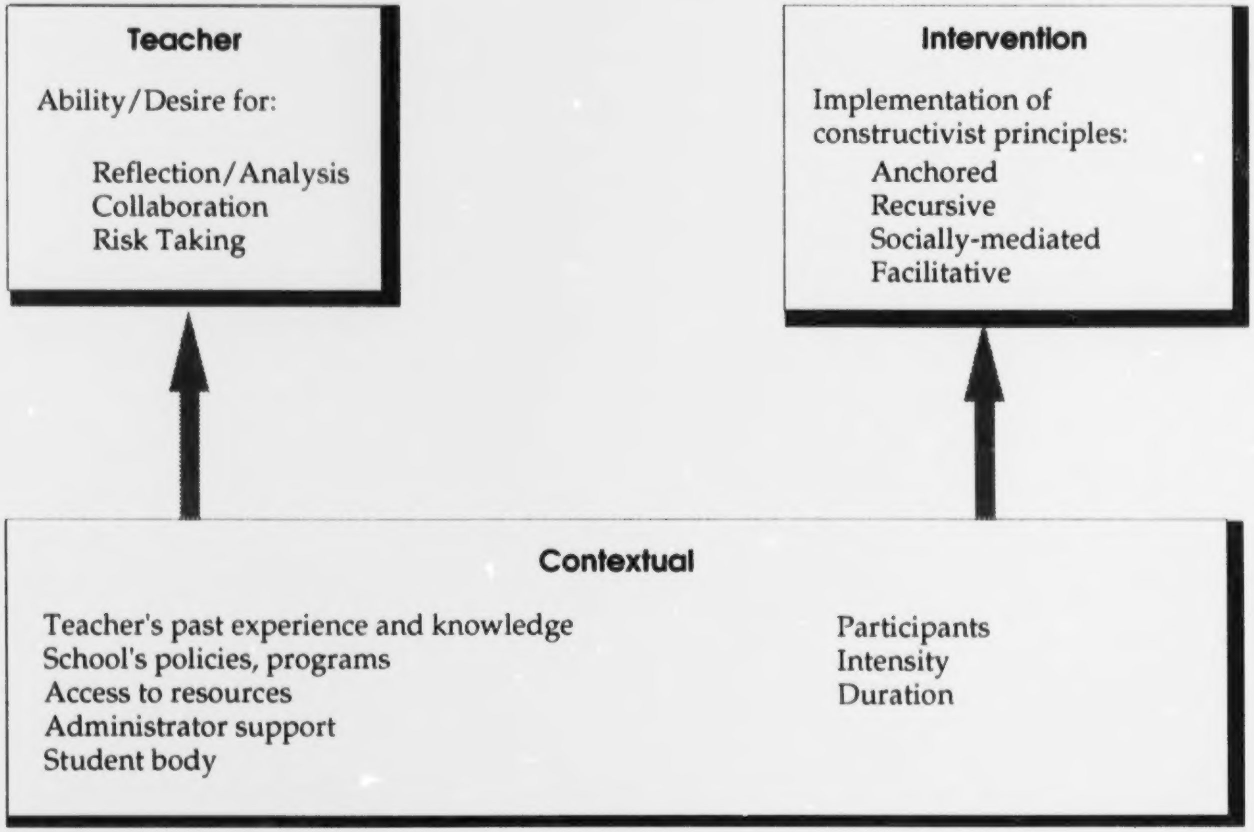
Figure 3 presents three sets of factors: 1) teacher, 2) intervention, and 3) contextual (broken down in terms of the teacher and the intervention). Below we discuss each set of factors, beginning with the contextual factors.

Contextual

Teacher. Contextual factors include the teacher's knowledge base (e.g., knowledge of whole language, language development, assessment strategies), philosophy, and practices; the school's and district's language arts policies; the school's special education programs; the human and material resources available to the teacher (e.g., funding for books and teaching materials, access to training and special support services); the support of building and district administrators; and the characteristics of the student population.

For example, teachers were in different starting places with regard to their knowledge, beliefs, and practices. In Year 1, the majority of teachers were more comfortable transmitting knowledge rather than helping students construct knowledge. In terms of language arts policies, in some districts, such as Hilton, the teachers were mandated to religiously follow the basal reader, administering the same unit tests at the same time within a grade level. In contrast, in Waterbury, the principal's policy toward reading was flexible, with teachers being given a choice about the kinds of materials and methods they wanted to use. Schools differed with regard to special education programming. This had an impact on the presence or absence of special education students in the mainstream during language arts time. For example, in Waterbury, support services were provided in such a way as to insure that students would not leave the mainstream classroom during language arts instruction. In contrast, in other sites, students were pulled out of the mainstream for special services purposely during language arts time. In all three schools there were many students who had language problems as well as a host of additional special needs.

Figure 3
THREE SETS OF FACTORS THAT IMPACT CHANGE


Teacher
Ability/Desire for:
Reflection/Analysis
Collaboration
Risk Taking
Intervention
Implementation of constructivist principles:
Anchored
Recursive
Socially-mediated
Facilitative
Contextual
Teacher's past experience and knowledge
School's policies, programs
Access to resources
Administrator support
Student body
Participants
Intensity
Duration

Intervention. This includes participants, intensity of contact, and duration. Participants in the training program included ten teachers, most of whom did not volunteer but rather were nominated by their principals. The project did not include building level administrators, language arts administrators or coordinators, or special education teachers or specialists. The intensity of the contacts with the teachers was affected by several variables. Project staff included three part-time trainers (the project director and two staff members) who served the needs of the ten teachers spread out in schools that spanned a fifty-mile radius of EDC. Given school schedules, travel time, and competing demands on the trainers to carry out their research responsibilities, the intensity of intervention was somewhat diluted. In terms of duration, the intervention spanned two and a half school years. When the project ended, many teachers and trainers felt that the length of time was too short since initial gains were just beginning to emerge.

Teacher Factors

These factors focus on the teacher's abilities (what teachers are capable of doing) and desires (what they wish to do). Under this heading we have included reflection and analysis, collaboration, and risk taking. Some teachers welcomed the opportunity to think deeply about and articulate their experiences. Others did not want to engage in such a process, avoiding opportunities to examine the teaching/learning process. When teachers did engage in reflection or analysis, we found that their ability to do so varied. Some were able to be insightful, while others had difficulty engaging in critical analysis. Collaboration refers to working closely with peers and trainers. Some teachers were not able to form close ties with others, while others did so easily. Some teachers relished the opportunity to establish a collegial relationship with someone outside of the school system who could provide support. Others, by word and by deed, indicated that such relationships were intrusive and undesirable. A third factor is risk taking, which means opening one's mind to new knowledge, being willing to change beliefs, and being willing to try out new practices. Some teachers were risk takers, other took risks hesitantly, and still others resisted doing so.

Intervention Factors

The intervention factors fall within the category of implementing constructivist principles. The way in which we translated the principles--anchored, socially-mediated, recursive, facilitative--into practice has an impact on the change process.

To anchor the change process, the trainers' role was to guide and encourage teachers to identify a felt need. A need to change something in particular gives teachers a clear direction in which to be moving. Some teachers, however, were more firmly anchored than others, who were unclear about what changes they wanted to make in their classes. To implement the recursive principle, trainers engaged teachers in a variety of workshop and technical assistance events so that they could repeatedly address issues such as: How do students learn language? What are the needs of students with language problems? What is the teacher's role? What types of methods and materials can best facilitate growth in all students and those with special language problems? Some of these events, however, might have been more or less effective for particular participants. The principle of social mediation was translated into practice by having the teachers from the three sites work together during workshops, trying to have the teachers within a school become a support group, and having the trainer and teacher work together. While in some workshops teachers were more collaborative, in others they were less so. In some schools, teachers shared with each other at particular times, and at other schools and at other times this did not take place. Some teacher/trainer relationships were stronger than others. The trainers facilitated the change process by modeling and demonstrating instructional strategies, supporting teachers, prompting reflection and analysis. There was variation among the teachers in terms of how many different strategies were used, when they were used, and how they were used.

Critical Factors

Above we have discussed three separate sets of factors related to teachers, the intervention, and the context. Each of these factors contributes to change. But complex change in knowledge, beliefs, and practice is not a result of particular factors; rather it results from a dynamic interaction among factors. The teacher's abilities and desires interact with the elements of the intervention. Contextual influences interact with the scope of the intervention.

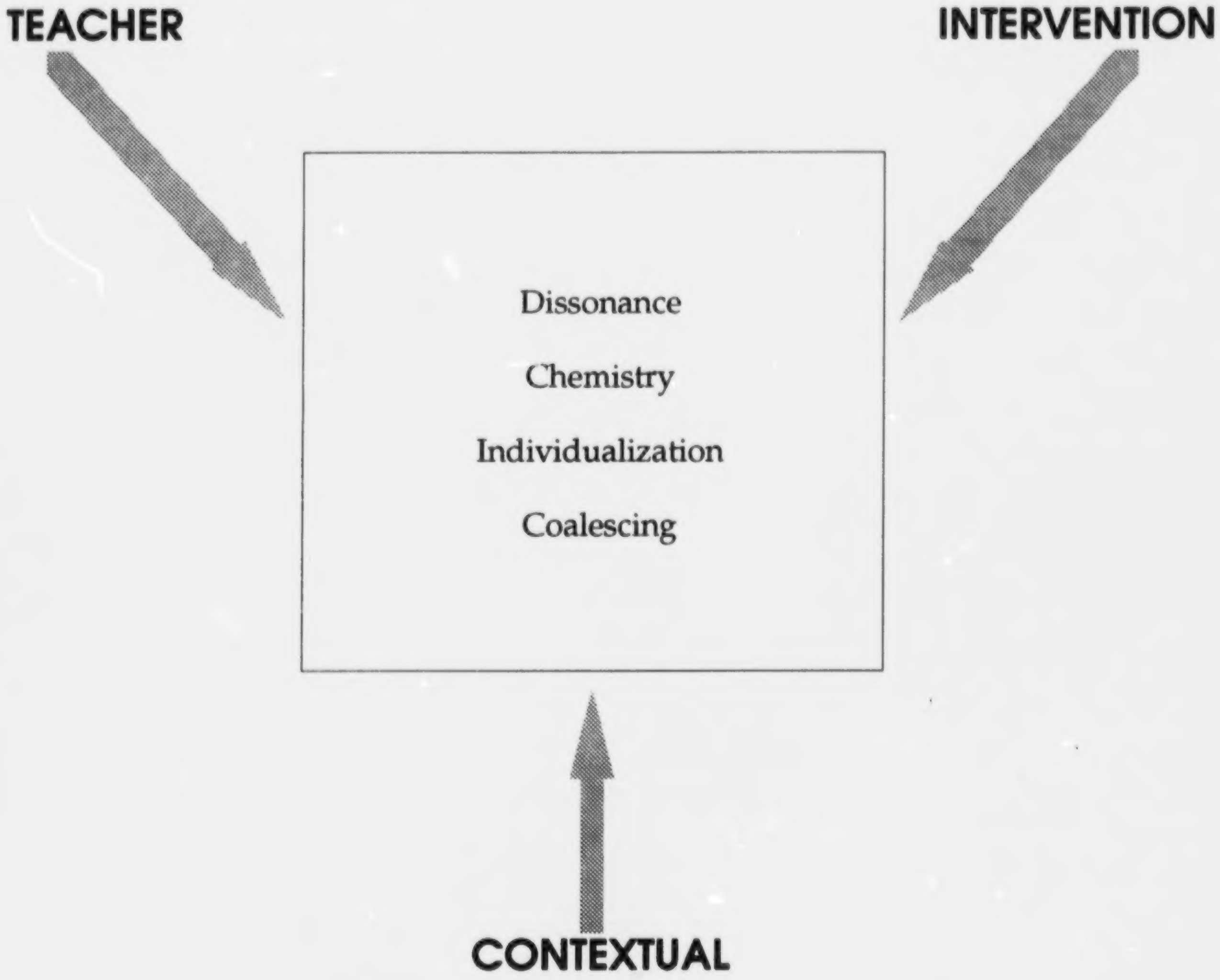
As shown in Figure 4, we have identified four critical factors--dissonance, chemistry, individualization, and coalescing. These derive their power from the interaction of the separate factors described above. These critical factors have played a forceful role in promoting or hindering change. Below we discuss each of these critical factors, showing how they arise and are shared by the interaction among factors.

Dissonance

Dissonance means that teachers are dissatisfied with the ways in which they are teaching and ways in which their students are learning. When we want teachers to identify an area of felt need to anchor the change process, we want them to identify this internal realm of dissonance. We found that it is critical for teachers to have this feeling of dissonance. Without it, they fall into the "if it ain't broke, don't fix it" syndrome that dead-ends the change process.

Many factors combine to create this feeling of dissonance. Administrators may have given teachers the message that the teachers are successfully meeting the student's needs, parental expectations, and the school's mission. They may not convey the message that the status quo needs to change and that as administrators, they will support a teacher's efforts to do so. Teachers may not have the reflective or analytic abilities to evaluate student progress and their own teaching, and thus are not able to "see" that anything

Figure 4
CRITICAL FACTORS


TEACHER
INTERVENTION
Dissonance
Chemistry
Individualization
Coalescing
CONTEXTUAL

needs fixing. In implementing the intervention, trainers may not have given teachers an image of what successful language arts teaching/learning looks like. The trainers may not have been able to help teachers compare their own teaching to this vision, may not have been able to ask the types of prompting questions that elicit such an analysis. Trainers may not have been supportive in helping teachers to articulate emerging ideas.

Chemistry

Chemistry is the intangible stuff that gives relationships among people their special character, quality, or nature. It is what makes some people feel as if they have an affinity for some and an aversion to others. We found that it was critical for the trainer and teacher teams to have a positive chemistry. This means that they liked each other as individuals, respected each other as professionals, and had a desire to work together. There was a spirit of partnering on a joint venture and that each would be making a significant contribution. For the teacher, it meant that she felt safe in the relationship, not vulnerable when taking risks. For the trainer, it meant feeling welcomed and valued by the teacher. But the most important aspect of chemistry is that the teacher and trainer were able to engage in a process of co-construction--together they built meaning and knowledge.

What factors interact to create this kind of a positive chemistry? The teacher must feel comfortable in collaborating with someone else to generate ideas, develop plans, and carry out actions that affect her classroom and students. The trainer must have the kinds of interpersonal skills that make a teacher feel safe and valued. Collaboration, the building of a relationship, takes time. People need to meet together, send messages, or talk on the telephone. Two contextual factors come into play. One is that administrators need to provide teachers with release time so that they can meet with a trainer. The trainer needs to allocate resources so that she can meet with all teachers.

Individualization

Individualization means that workshops and technical assistance are tailored to the abilities, learning style, needs, and desires of the teacher. It means that the kinds of strategies the trainer uses to facilitate change in a teacher resonate with what that trainer knows about the teacher. We found that when the intervention was individualized to meet the emerging needs of the teacher, then the teacher was more able to make changes that reflected student's needs.

In order for individualization to take place, both the teacher and trainer need to be reflective and analytic. The teacher needs to be able to articulate her needs and desires, and the trainer needs to engage in ongoing assessment to understand where the teacher has been, what has worked and not worked, and what might promote continued growth. The trainer has to have a repertoire of strategies available, and to be able to evaluate and select appropriate ones, anticipating what will and will not work. The teacher also needs to be able to give the trainer feedback. In terms of context, the trainer has to have the time available to "be there" for the teacher at critical turning points. For example, the trainer, in response to a teacher's request, needs to be there at the right time to model peer conferencing, just as the teacher is moving in this direction within the writing process.

Coalescing

Coalescing means that there is a point at which knowledge and beliefs are consolidated and give rise to a unified set of new practices. When this happens, it seems to mark a point of departure. From this time on, momentum for change builds. Although this could take place when the intervention begins, it could also happen any time while the intervention is in progress. It's that time when new knowledge, beliefs, and practices all meld in such a way as to thrust the teacher forward. The teacher recognizes the change, is pleased with what is happening, and works to sustain and expand change. We found that coalescing was an extremely critical factor. Without it, there was a sense of plodding along a road that had no destination, or of complying with some outside intervention that would shortly go away. With it, there was a momentum that built and was sustained.

Every one of the factors identified in this section contributes to coalescing. For example, coalescing draws together the teacher's reflective and analytic ability to see positive outcomes in students, effective facilitation on the part of the trainer to support change, an infusion of new ideas from other teachers, flexible school policies and procedures that do not create barriers, and the opportunity for the trainer to work intensively with the teacher as needed.

How the Critical Factors Contribute to Change

Figure 5 shows how the presence or absence of the critical factors contributed to extensive, moderate, and minimal change in teachers. Below we discuss these factors in relation to the degree of change, drawing on case materials.

Extensive Change

All of the four critical factors need to be present in order for extensive change to take place. The change process is anchored because the teacher feels dissonance in some area of teaching/learning. The intervention, in response to the teacher's felt need, is individualized in the ways described above. There is a positive chemistry between the teacher and trainer. At some point, momentum builds and is sustained because of the coalescing of new knowledge, beliefs, and practice.

Marilyn illustrates a teacher who changed extensively during the intervention. When the project began, Marilyn, a third-grade teacher, was an ardent user of the basal reader, had little or no writing take place in her classroom, and had a well-organized but sterile

Figure 5
HOW CRITICAL FACTORS CONTRIBUTE TO CHANGE

	Extensive	Moderate	Minimal
Dissonance	✔	✔	
Individualization	✔	✔	✔
Chemistry	✔	✔	
Coalescing	✔		

classroom environment with students sitting in rows. Through reading books and journal articles, visiting schools to see what whole language meant in practice, holding conversations with the trainer, discussing ideas with colleagues, she began to become dissatisfied with how she was teaching and what her students were learning. She began to articulate the areas in which she wanted to work: writing, using a literature-based reading program, eliminating homogeneous reading groups, changing the physical organization of the classroom. Hearing her needs and interests, the trainer offered Marilyn suggestions, co-planned lessons, demonstrated teaching strategies, lent her materials. She tailored each of these strategies to Marilyn's needs, taking into consideration Marilyn's questions, issues, and interests. The trainer and Marilyn established a productive, warm, and mutually respectful relationship. This helped Marilyn to feel safe, not only in taking risks and trying new practices in reading and writing, but also about reflecting upon and talking about her experience in a constructive way. There was a point, towards the end of Year 2, that Marilyn integrated her thinking. The different changes she was making began to be shaped into a cohesive whole. Her classroom began reflecting the principles of a whole language classroom. For example, students were doing thematic units; there were heterogeneous reading groups sitting cross-legged on a rug while sharing and discussing literature; all students were writing frequently following a process approach that involved peer conferencing; and student desks were arranged in clusters so students could work together. When Marilyn reached this point, there was a coming together of the knowledge, theory, and practice, and this would serve as the framework that could guide continued changes.

Moderate Change

The critical factors that contribute to moderate change in teachers are dissonance, individualization, and chemistry. What is missing is the coalescing.

Kim is an example of a teacher who made moderate change. At the outset of the study, Kim, a second grade-teacher, was using her basal reader, having students write frequently. The class would brainstorm, students would write, she would correct, and students would rewrite. She had an attractively arranged classroom. Over time, Kim identified two areas of need: 1) strengthening the writing process to allow students to revise and 2) introducing thematic units of study. The trainer modelled instruction, demonstrated strategies with small groups, co-planned and co-taught lessons with Kim. These facilitative strategies were highly individualized, tailored to Kim's needs. Kim and the trainer had a strong and satisfying relationship, with both feeling that they were contributing to what was happening in the classroom. Over time, Kim modified her writing techniques so students had a chance to revise, work in peer conferencing situations, and share what they had written. She worked with small groups of students to make some beautiful big books that contained everyone's writing. Kim developed units on whales and sharks, drawing on student's interests. Reading about these topics in library books and holding discussions replaced basal reading group time twice a week. Kim expressed positive feelings about what she was doing, but never totally "bought into" a whole language approach or convinced herself that such an approach would meet her students' needs. She grappled with deeply felt questions about assessment, the need for skill work, and her role as the dispenser of knowledge. She talked positively about her new knowledge and new strategies, but admitted that she had not shifted her philosophy in a substantial way.

Minimal Change

Minimal change is characterized more by the absence of critical factors than by their presence. The only factor that is present is individualization. Individualization is severely limited, however, because the teacher has not clearly identified an idea of need. The need is really identified by the trainer, with some or often little ownership by the participating teacher.

Mindy, a first-grade teacher, offers us an example of minimal change. When we first met Mindy, we were impressed with her beautifully decorated classroom, the number of library books on display, and her ability to dramatically read aloud to students. She seemed to have an initial, polite interest in the project when the project began, but this was not sustained. Over the two and a half years that Mindy participated, we were never able to establish a warm, or trusting relationship. Trying to respect the signals Mindy was giving us, we lessened our involvement with her. Mindy never fully identified an area in which to concentrate her efforts. She asked us to "tell her what needs to be done." After our own analysis of what might strengthen her classroom, we focused on writing. We tried then to individualize the type of support we gave Mindy, taking into account the way she liked to organize instruction. The few times we worked with Mindy, however, never served as a catalyst for further work. Mindy did remain in the project until its conclusion and felt that by participating she fine-tuned her teaching in ways that were comfortable and satisfying for her.

CHAPTER 5: RECOMMENDATIONS

INTRODUCTION

The purpose of this chapter is to draw on the results of the project to present recommendations that will guide administrators, supervisors, and trainers in designing and implementing an intervention based on constructivist approach.

RECOMMENDATIONS

In this section we discuss eight specific recommendations.

1. Create a Context for Change

In this research project, we identified a need that existed in first-, second-, and third-grade classrooms--to improve the language development of all students, particularly those with language problems, by implementing a whole language approach. By being "outsiders" who tried to implement a change process within a school, we learned some (hard) lessons about creating a context for change.

One lesson is the importance of administrator buy-in and support. All the building level and district level administrators who agreed to have their schools participate thought that our project would meet the district's or school's goals. But there was no genuine commitment, no linking to a greater mission or direction for change articulated by an assistant superintendent, coordinator of language arts, or building principal. Without this much-needed support, teachers got the message that change would be nice but was not necessary.

Administrator buy-in and support is only one part of equation. The decision for a school to participate in the project was a top-down decision, made apart from teachers. They never had a chance to identify language arts, or whole language as a priority. The teachers should have been consulted about the areas in which they thought change was needed. Change that is only directed by administrators usually is not owned by teachers (Lestore and Onore, 1991).

Administrators not only need to be part of the start-up of such a project, but they also need to be involved throughout the life of the project in realistic ways. In terms of participating, they could attend workshops, meet with trainers and teachers.
The goal would be for them to build a vision with teachers about the direction of change, understand what teachers are doing to turn this vision into practice, provide support for risk taking, and serve as a liaison between teachers and the district.

2. Be Selective about Which Teachers Participate

The teachers participating in the intervention in this study were not volunteers. For the most part, they complied with their administrators' wishes that they participate. Once in the project, some saw it as an opportunity that meshed with their own agenda for change; however, others resented involvement throughout the life of the project, never investing in the process because they did not want to change.

In another project at EDC about teacher change at the middle school level (Zorfass et al., 1991), we found that by having teachers volunteer as a pioneers, they were heavily committed to learning about and implementing inquiry-based instruction. Teachers who come forward and are selected for a teacher development project designed to implement constructivist principles need to have a desire to change, a willingness to work closely with trainers and colleagues, and a willingness to take risks in thinking about new knowledge, changing beliefs, and trying new practices. Pre-screening is a necessary step. Also, even once a teacher says that she or he is interested, there needs to be honest discussion about what actually will be involved, what is expected of the teacher, and especially, what are the goals of the program.

3. Train the Trainers in Constructivist Principles

The trainers who worked directly in this project were firmly committed to the constructivist principles we used to guide the design of the intervention. However, translating principles into practice requires training. Given the nature of the current project, much of the training was "on the job." There was minimal training prior to beginning the project because of time constraints. In reality, most training was reactive. That is, as we moved into new situations we determined the role of the trainer and how best to proceed. It would have been more advantageous if we had spent time up front, to train our staff by

- explicitly discussing the role of the facilitator
- role playing how trainers would act in certain situations
- simulating the teacher/trainer experience.

This short list presents only a few of the strategies training programs can use to train trainers who are just beginning to enter this area. It is also important to build in, from the very beginning, support system for trainers. This will insure that during implementation they know they will have ongoing assistance.

4. Choose Trainers Carefully

In this project, the trainers were outside change agents. There were both advantages and disadvantages to being outsiders. For example, it was an advantage to be "neutral," to not have a history in the school, to be non-evaluative, and to be objective. At the same time, it was a disadvantage to be working outside of the system, with no real influence or power. In weighing the advantages and disadvantages, we believe that it's better to have an internal change agent.

What criteria should be considered in selecting a trainer or facilitator? Based on our findings and findings from other projects at EDC (Zorfass et al., 1991), we recommend the following criteria. The persons should

- be familiar and comfortable with constructivist principles
- have an understanding of language development, language problems, and whole language approaches
- have excellent interpersonal skills
- have power to influence change
- have a flexible schedule

5. Support Fundamental Change Intensively over Time

Our research project revealed that implementing a constructivist approach to teacher development can be labor- and time-intensive. This project had a part-time staff of three who worked with ten teachers over a three-year period--a luxury in the realm of training. The basic premise of our teacher development program was to support teachers through a fundamental change process, leading to a paradigm shift. We learned that those who design a program to meet this goal must carefully consider how they will allocate resources over time. They have to be sure that teachers have access to trainers not only on a regularly scheduled basis, but also on an as-needed basis. Time and support is needed for teachers to become aware of or internalize various principles, to try out a variety of new techniques and strategies aimed at achieving those principles, and then "coalesce." Some teachers, once things coalesce, might require less direct and intense assistance. Others may need a longer time to reach this point. Each of these stages may take at least a year or two to unlearn ingrained habits of thought and practice, and ultimately incorporate new ones. Those attempting to produce such fundamental change had best leave plenty of time and room for discussion, demonstration/modeling, practice, observation, feedback, and reflection. To meet these goals, those who design and implement teacher training need to develop productive and cost-effective systems to give teachers the type of technical assistance that will really make a difference.

6. Adhere to the Constructivist Principles during Implementation

One of the main challenges in implementing a constructivist approach to teacher development is adhering to that approach. Several factors related to the teachers and the trainers can hinder this. Not only the participating teachers, but the trainers in the project as well were products of the knowledge transmission, factory-based model of schooling. This type of teaching and learning has been firmly ingrained in all of us who fall within a particular age range. It's not easy to break away from this, because it's what we know and were raised on. For example, there were times that trainers offered too much advice, assistance, or direction, not letting the problem solving or thinking emerge from teachers. At the same time, there was a tug in the direction from teachers to fall back on a knowledge transmission mode. It was not uncommon for teachers to make comments such as, "Just give me a recipe. Tell me what to do. You decide what the lesson should be." Trainers had to resist such suggestions and monitor themselves to say, "I'll work with you so you decide, or you design, or you select." Trainers have commented that it makes them feel as if they are swimming against the tide in these situations and that it takes conscious effort to stay the course of the constructivist approach. Thus, it is important to build in training and ongoing support for the trainers.

7. Find Creative Ways to Provide Ongoing Assistance that Is Not Labor Intensive

The present project had intended to build a peer coaching program into the intervention, but was not able to do so for a variety of reasons (e.g., lack of time and resources, lack of interest on part of teachers, and lack of administrator support). However, the literature on this approach indicates that it offers teachers many opportunities to gain help and support. In designing an intervention, it would be useful to think about incorporating this from the outset to reduce the labor intensity of trainers.

8. Build in Ways to Monitor and Fix-Up the Ongoing Intervention

In the previous chapter we identified four critical factors that promoted or hindered change--dissonance, chemistry, individualization, and coalescing. It is important to build in some kind of monitoring system to know if these factors are present, and to try to strengthen the program if they are not. In this monitoring system, teachers should have an opportunity to give ongoing feedback, trainers should have an opportunity to meet regularly to provide each other with support, and monitoring tools can be used to collect data.

FINAL REMARKS

This project has provided EDC with an outstanding opportunity to understand teacher change while teachers are engaged in an intervention based on constructivist principles. As the project ended, many interesting questions emerged that would guide our future work. A starting point would be to design an intervention that followed all the above recommendations. Also, in the next round of work, we would want to focus on student outcomes. In this project, we had a growing sense that the teachers' practices were having a positive effect on students. For example, students were beginning to write, to read with meaning, and to share their ideas with others. Further work needs to consistently document these changes to provide the fuel for bringing constructivist teaching and learning into the classroom.

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APPENDICES

Appendix A

PROJECT FULFILL YEAR II

WORKSHOP II

JANUARY 10, 1990

WORKSHOP EVALUATION

1. **In what ways did you find goal setting for today's workshop useful?**

2. **Please comment on the value of today's workshop activities:**

   Browsing and generating themes -

   Brainstorming and discussing topics -

3. **In what ways do you think that Special Needs students can, or cannot, benefit from a literature-based approach to language?**

Appendix B

OPEN-ENDED STATEMENT OF CONCERN
PROJECT FULFILL YEAR II
Fall 1989

NAME____

In order to continue meeting your needs, we would appreciate your taking a few minutes to tell us any concerns you might have about your involvement with Project FULFILL. Your feedback is an essential ingredient for its success. These concerns might be related to any of the following issues:

> modifying the curriculum - trying out new methods or using new materials
> mainstreaming of special needs students
> your time involvement
> observation in the classrooms
> testing
> attending workshops
> being interviewed
> your responsibilities in the project

or any other aspects of the project that concern you.

Please respond in terms of your present concerns or how you feel about your involvement with the project. We do not hold to any one definition of this innovation, so please think of it in terms of your own perceptions of our approach to teaching reading and language to students with language problems.

Thank you for taking time to complete this task.

Pupil Behavior Rating Scale Group Record Chart

Nadine M. Lambert and Carolyn S. Hartsough

TEACHER MRS. HALL
DATE DEC. 14, 1978 GRADE 3-4
SUBJECT PERIOD
SCHOOL SEACREST ELEMENTARY
DISTRICT ELLWOOD UNIFIED

Rating Scales

STUDENT NAME	TOM A.	PAUL R.	DIANE L.	CYNTHIA A.	DOUG H.	GEORGINA D.	BRANDYN A.	CHUCK L.	LEO C.	RUDY B.			
1. This pupil fights or quarrels more often than the other pupils do.	L M [✓ H] 2.0	L [✓ M] H 1.25	L [✓ M] H 1.0	[✓ L] M H 0.25	[✓ L] M H 0.0	[✓ L] M H 0.5	L [✓ M] H 2.5	L M [✓ H] 1.75	L M [✓ H] 2.75	[✓ L] M H 0.75	L M H	L M H	L M H
2. This pupil has difficulty following directions.	[✓ L] M H 0.25	L M [✓ H] 2.75	L [✓ M] H 1.25	[✓ L] M H 0.75	L M [✓ H] 2.5	L [✓ M] H 1.5	L M [✓ H] 2.25	L M [✓ H] 2.0	L [✓ M] H 1.75	L [✓ M] H 1.8	L M H	L M H	L M H
3. This pupil makes immature or inappropriate responses during school activities.	[✓ L] M H 0.25	L M [✓ H] 2.0	[✓ L] M H 0.5	[✓ L] M H 0.3	[✓ L] M H 1.0	[✓ L] M H 0.75	L M [✓ H] 2.5	L [✓ M] H 1.8	L M [✓ H] 2.75	L [✓ M] H 1.5	L M H	L M H	L M H
4. This pupil is too dependent on the teacher and becomes uneasy without continual supervision.	[✓ L] M H 0.0	L M [✓ H] 2.75	[✓ L] M H 0.5	[✓ L] M H 0.25	L [✓ M] H 1.5	L [✓ M] H 1.4	L M [✓ H] 2.5	L M [✓ H] 2.6	L [✓ M] H 1.8	L [✓ M] H 2.0	L M H	L M H	L M H
5. This pupil has to be coaxed or forced to work or play with others.	[✓ L] M H 0.25	L [✓ M] H 1.75	L [✓ M] H 1.0	[✓ L] M H 0.4	[✓ L] M H 0.5	L [✓ M] H 1.6	L [✓ M] H 1.25	L M [✓ H] 2.25	L [✓ M] H 1.5	L M [✓ H] 2.5	L M H	L M H	L M H
6. This pupil is easily distracted.	[✓ L] M H 0.25	L M [✓ H] 2.75	[✓ L] M H 0.75	[✓ L] M H 0.5	L [✓ M] H 2.0	L [✓ M] H 1.7	L M [✓ H] 2.5	L M [✓ H] 2.6	L M [✓ H] 2.25	L [✓ M] H 1.75	L M H	L M H	L M H
7. This pupil behaves in ways that are dangerous.	[✓ L] M H 0.0	L [✓ M] H 1.25	[✓ L] M H 0.25	[✓ L] M H 0.3	[✓ L] M H 0.05	[✓ L] M H 0.75	L [✓ M] H 1.75	[✓ L] M H 0.6	L M [✓ H] 2.25	[✓ L] M H 0.35	L M H	L M H	L M H
8. This pupil has no enthusiasm for school and does not respond to or maintain interest in learning.	[✓ L] M H 0.3	L [✓ M] H 1.75	[✓ L] M H 0.25	[✓ L] M H 0.5	L [✓ M] H 1.5	L [✓ M] H 1.25	L M [✓ H] 2.75	L [✓ M] H 2.1	L M [✓ H] 2.25	L [✓ M] H 2.0	L M H	L M H	L M H
9. This pupil has difficulty in learning skills.	L [✓ M] H 1.25	L M [✓ H] 2.25	L [✓ M] H 1.0	[✓ L] M H 0.5	L M [✓ H] 2.5	L [✓ M] H 2.0	L [✓ M] H 1.5	[✓ L] M H 0.75	L [✓ M] H 1.25	L M [✓ H] 2.75	L M H	L M H	L M H
10. This pupil becomes sick or upset or may stay home from school when faced with a difficult problem or situation.	[✓ L] M H 0.25	[✓ L] M H 0.5	L [✓ M] H 1.75	[✓ L] M H 0.3	[✓ L] M H 1.0	[✓ L] M H 0.8	L [✓ M] H 1.6	L [✓ M] H 2.0	[✓ L] M H 1.85	L [✓ M] H 1.5	L M H	L M H	L M H
11. This pupil seems unhappy or depressed.	[✓ L] M H 0.0	[✓ L] M H 0.25	L M [✓ H] 2.25	L [✓ M] H 1.25	L M [✓ H] 2.15	[✓ L] M H 0.5	L M [✓ H] 2.1	L M [✓ H] 2.5	L M [✓ H] 2.0	L [✓ M] H 1.0	L M H	L M H	L M H
Total	4.8	19.25	10.5	5.3	15.7	12.75	23.2	20.95	21.6	17.9			

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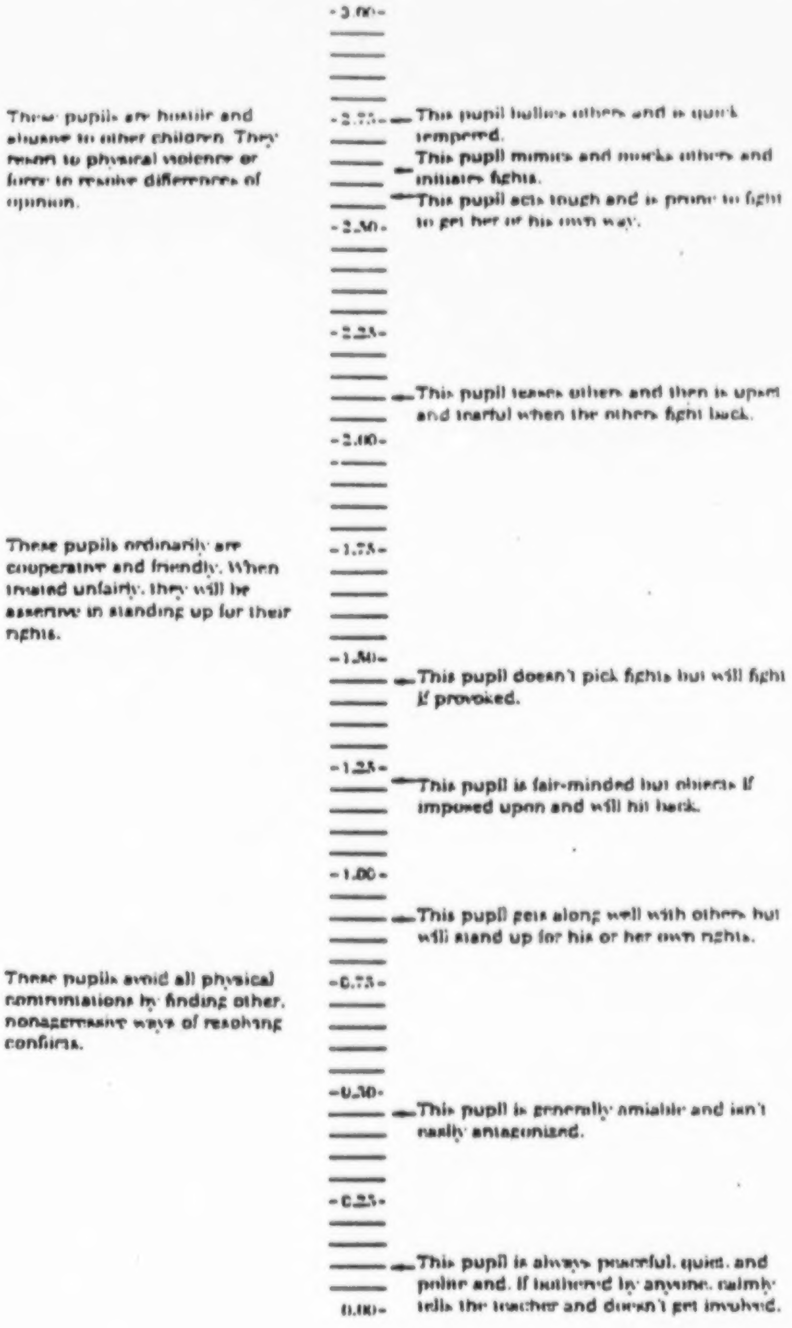
Completed PBRS Group Record Chart

Appendix D

1. This pupil fights or quarrels more often than the other pupils do.



These pupils are hostile and abusive to other children. They resort to physical violence or force to resolve differences of opinion.

This pupil bullies others and is quick tempered.

This pupil mimics and mocks others and initiates fights.

This pupil acts tough and is prone to fight to get her or his own way.

This pupil teases others and then is upset and tearful when the others fight back.

These pupils ordinarily are cooperative and friendly. When treated unfairly, they will be assertive in standing up for their rights.

This pupil doesn't pick fights but will fight if provoked.

This pupil is fair-minded but objects if imposed upon and will hit back.

This pupil gets along well with others but will stand up for his or her own rights.

These pupils avoid all physical confrontations by finding other, nonaggressive ways of resolving conflicts.

This pupil is generally amiable and isn't easily antagonized.

This pupil is always peaceful, quiet, and polite and, if bothered by anyone, calmly tells the teacher and doesn't get involved.

Attribute 1 of the *Pupil Behavior Rating Scale*

APPENDIX E
Project FULFILL

STATEMENT OF CONCERNS

Cumulative Responses Obtained 6/89, 11/89, 1/90, 6/90
from INTERVENTION Teachers in Grades 1,2, and 3 in
Waterbury, Filmore, and Hilton

	WATERBURY			**FILMORE**			**HILTON**			
	Gr. 1	**Gr. 2**	**Gr. 3**	**Gr. 1**	**Gr. 2**	**Gr. 3**	**Gr. 1**	**Gr. 2**	**Gr. 3**	
0										Awareness
1	√	√√√√	√√√√		√√		√	√√√√	√√√√	Informational
2	√√	√√√ √√	√	√√√	√√√√	√		√√	√√	Personal
3	√	√	√√√	√√	√√√√	√√			√	Management
4	√√√√	√√√√	√√√√		√	√√	√		√	Consequence
5	√√	√√√	√							Collaboration
6										Refocusing

Appendix F

STAGES OF CONCERN ABOUT THE INNOVATION[5]

0 *AWARENESS:* Little concern about or involvement with the innovation is indicated.

1 *INFORMATIONAL:* A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be unworried about himself/herself in relation to the innovation. She/he is interested in substantive aspects of the innovation in a selfless manner such as general characteristics, effects, and requirements for use.

2 *PERSONAL:* Individual is uncertain about the demands of the innovation, his/her inadequacy to meet those demands, and his/her role with the innovation. This includes analysis of his/her role in relation to the reward structure of the organization, decision making and consideration of potential conflicts with existing structures or personal commitment. Financial or status implications of the program for self and colleagues may also be reflected.

3 *MANAGEMENT:* Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.

4 *CONSEQUENCE:* Attention focuses on impact of the innovation on students in his/her immediate sphere of influence. The focus is on relevance of the innovation for students, evaluation of student outcomes, including performance and competencies, and changes needed to increase student outcomes.

5 *COLLABORATION:* The focus is on coordination and cooperation with others regarding use of the innovation.

6 *REFOCUSING:* The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.

---

[5] Original concept from Hall, G. E., Wallace, R. C., Jr., & Dossett, W. A. A developmental conceptualization of the adoption process within educational institutions. Austin: Research and Development Center for Teacher Education, The University of Texas, 1973.

Appendix G

KIM

BACKGROUND

Kim has been teaching for twenty-four years, ever since she graduated college. She has taught kindergarten and first grade, but prefers second grade which she is now teaching. Kim has had no formal training in special education.

The school is located in a semi-urban town close to a large metropolis. The student population is ethnically and socio-economically diverse. Teachers are generally aware of new trends in education, with some teachers being more innovative than others. Out of our three field sites, this site had the most open policy towards language arts instruction. Teachers were not bound to basals but had permission to try integrated language arts approaches.

We have chosen Kim for your review because over the two and a half years she participated in the project, she gradually shifted her teaching to a more whole language/integrated approach, not only with normally achieving students; but also with special needs children mainstreamed in her class. In Year 1, you will read that she ran a traditional classroom. Desks were arranged in rows to limit student interaction. Reading was taught from basals in homogeneous ability groups. Reading instruction for special needs students focused on skill building, while middle and top groups concentrated on concepts. Writing topics were assigned, and all work (first draft and final copy) was completed in a single period. By Year 3, you'll read how her classroom has shifted. Desks are arranged in clusters. Basals are used only three days a week, with trade books used occasionally. On the other two days, all children, including those with special needs, are involved in independent learning projects—thematic units and/or process writing. Kim still teaches skills; but on an individual; as needed basis. Students now have opportunities to write on topics of their own choosing, sometimes over a period of two weeks.

YEAR 1

Immediately before meeting Kim, we were warned by the principal that she would probably be "our toughest nut to crack." It was with some trepidation that we entered Kim's classroom the first time, only to find her open and quite pleasant. The three observations that we made in Year 1, led us to the conclusion, however, that in a sense the principal was right. Kim was self-assured both personally and professionally. She felt she had successfully taught children to read and write for twenty-two years, using traditional methods. She said she was willing to learn about new methods, but saw no need to change. When we first began observing Kim, the research team felt that she obviously enjoyed teaching and related to students with respect and humor.

Desks were arranged in three rows facing the board. Kim told us that she chose this arrangement because it allowed "more space and less temptation to chat with friends." She had tried many other kinds of arrangements over the past 22 years, but had found this to work the best. "In groups, they don't pay attention, and move around sometimes." Students moved around only with permission. Each day Kim listed work requirements (e.g., workbook pages, assigned writing topic) on the blackboard. Students worked at these independently while Kim was working with her three reading groups.

Kim had three reading groups. Each group used a basal, but the top group was allowed to read from trade books instead of a basal at the end of the year. Kim spent a half an hour each day with each of the three groups. Most reading was oral. Silent reading was done only at home or when children were finished with work. Pleasure reading occurred only when all assigned work was completed. During reading group time, she asked questions quickly and demanded equally rapid responses. When working with her top and middle reading groups, she often challenged children to elaborate ideas and make links between reading and real life. For example:

> Kim: How do you know when time goes by?
> [Students offer some ideas.]
> Kim: Is there any other way you can tell that time goes by? I'll give you a clue.. are you the same as you were last year?
> S1: Yes, bigger.
> Kim: Does everyone get bigger?
> Kim: What about people like me? Do you think I'm bigger than I was last year? I haven't grown in all the years that I've been teaching. . . How can you tell that someone is older?
> [Students suggest: Gray hair, wrinkles.]
> Kim: Sometimes, people get shorter.
> S2: Why's that?
> [Kim explains about people stooping over. A student says something about Kim getting wiser. She laughs.]

When working with the poor readers, she asked fewer prior knowledge or elaborative-type questions. Instead, Kim's emphasis seemed to be on literal comprehension and skills (phonics, isolated vocabulary words). For example:

> Kim: Open to page 70. seven, oh.
> She writes on the board, "aw" and "au". This is a review of sounds the students have worked on before.
> Kim: What sound do these make?
> S1: /ou/.

> Kim: Nope, that's o,w.
> S2: /aw/.
> [Kim repeats the sound clearly and writes "hawk" on the board. Student reads it. Another student says "raw." Kim writes "sauce" on the board.
>
> Kim continues to review "aw" words and then students begin reading from their basal.]

Students wrote several times a week on assigned topics. Kim often used story starters such as "Valentines day is. . ." Other times, Kim gave a general topic idea such as "Dinosaurs." Students first brainstormed ideas as a class, then worked independently on rough drafts, conferenced with Kim to correct spelling and grammatical errors, and lastly recopied their stories. Usually writing assignments were completed in one period.

In her Year 1 interview, Kim told us that she had no formal training on dealing with special needs students; but had often been given problem students because of her effectiveness with them. She said she tried to modify assignments so that students would experience success. She told us that she dealt with special needs students by sometimes using different materials, and by having lower expectations.

YEAR 3

Desks are now arranged in clusters to form "tables." Since November there has been a carpet (transported from Kim's home) at the front of the room. It is used when Kim reads aloud to students, and when students share their writing with the whole class. Three days a week, the morning routine is similar to Year 1: Kim conducts reading groups while the children complete assigned seatwork. The other two days, however, morning language time is devoted to, as Kim would say, "other things." The block of time (approximately 90 minutes) that would otherwise be devoted to reading groups and seat work, is now given over to independent learning activities. Initially Kim used this time to allow students to research a specific topic chosen by students (e.g.,whales). Kim brought in books on whales for the students to independently or cooperatively peruse, and occasionally introduced information to the whole class by way of videos and filmstrips. The students wrote about and later shared what they had learned.

Recently, Kim began using Tuesday and Thursday morning language time to allow students to write books on any topic of their choosing. On these days, students are not given specific assignments to complete. Instead, it is expected that they will continue on with their writing, without specific teacher directions. Students walk around the room without teacher permission—to peruse resource materials (e.g., shark books and models) and share their stories with friends. In addition to eliciting background knowledge with able students, Kim is now using more enrichment techniques for the special needs children. For example, in preparation for the thematic unit on whales, Kim worked with a group of six children which included the three focal special needs children (**George, Lisa and Nancy)** plus three normally achieving students:

> Kim: Remember when we did the sharks, we talked a bit first about all the things we knew? (Several kids respond, "Yeah!") And when we did the owls, we talked about all the things we knew before we looked in our books, remember? Do you think there are some things that you know about whales already?
> S: There's a killer whale.
> [Kim writes down S's sentence word for word on chart paper.]
> S: There are blue whales.
>
> **George**: A baby killer whale weighs a hundred pounds.
> Kim: Are you sure?
> **George:** Yeah.
> [Kim writes down George's words, and asks, "When it's born?"]
> **George:** Yeah.
> **Nancy:** There are gray whales.
> Kim: Anything else that you know, or that you think you know about whales?
> **George:** Yeah, I know. The humpback whale sings.
> Kim: We're going to find out if these things that we think we know are true. Right? We're going to look through the books. Do you know anything else, George?
> **George:** I think, I'm not positive, a mother baby whale, not a mother baby whale, a mother whale is probably better than any other. I mean better than a father whale, I think.
> Kim: Why?
> **George:** Because a mother takes care of the baby so she needs a lot of courage like if someone tries to take the baby, because she's watching the baby. So if a shark comes in she's probably stronger than the man shark.
> Kim: So you want to say that the mother whale. . . (pauses to let George say the words for her to write on the chart)
> **George:** The mother whale is probably better than the father shark.
> Kim: Whale.
> **George:** Yeah.
> Kim: O.K. [Writes: The mother whales are stronger than the father whales.]

> **George:** Yeah. I got that from the owl. Remember the owl? (the class had studied owls previously)
> Kim: Oh! Cause the owl. . . Oh alright. So you think the same thing will happen in the whale family as the owl.

At the start of Year 3, Kim told us that she planned to teach her basal-based reading groups as she had every year—on a daily basis. Kim, however, said she was burdened with an impossible schedule of specialists' times (music, library gym) and remedial pull-out services (LD, chapter 1, ESL) resulting in an extremely "chopped up" morning. Kim decided that it would be next to impossible to meet with each group every day, and so decided to experiment with teaching reading groups only three times a week. Kim says that she will continue this arrangement next year, regardless of her schedule, "because the students are getting so much out of it."

Kim says that now reading instruction, no longer occurs only during reading group time. Instead reading is integrated with writing within thematic units (e.g., whales, sharks, and penguins). She claims that she still teaches skills, but on an individual basis, usually in the context of reviewing a student's writing. At the same time, however, Kim has not given up the basal entirely. She continues to hold reading groups three times a week. On the other hand, she is experimenting with having all groups read trade books (a different book for each level).

Students are now writing on topics of their own choosing. Stories are often several pages long, taped together in scroll like fashion. Students may work on one story for a period of time, even up to two weeks. In December, for the first time, Kim allowed some uncorrected writing to go home, though she said, "It went against my grain." Kim allows and even encourages invented spelling in rough drafts. Commenting in March about invented spelling in first drafts, she told us, "I like it. I don't like being interrupted to tell them 50,000 times how to spell a word. I just say do your best and we'll fix it up when we conference." Invented spelling on second drafts (final copies) is another matter. Students conference with Kim after they have written a first draft. In these private sessions, Kim corrects spelling and grammatical errors while students look on. Kim says she is astounded by the level of enthusiasm of her class for writing. She told a FULFILL staff member in March that children are writing every spare minute and frequently ask to take their writing home.

On Tuesday and Thursday mornings special needs students complete the same work as other students in the class (e.g., writing books, researching information on whales). Students are free to work independently, or with classmates interested in the same topic. During these Tuesday and Thursday times, Kim makes no attempt to group children according to ability level.

As the year draws to a close, Kim says she is amazed by the success of her special needs students and proud of them. She says the special needs students have accomplished more more this year than she ever thought possible. Earlier in the year (December) she sounded far less optimistic. She worried that spending less time on the basal would hurt the special needs children the most—for they were the ones most in need of direct skill instruction. In March, however, Kim defended her decision, saying that she didn't think children were being hurt at all, since she now taught skills during individual conference times and, when needed, through mini-lessons. "Don't get me wrong, " she added. "Some kids are still lacking, but they would be anyway."

SUMMARY OF CHANGE IN PROCESS

Over the duration of Project FULFILL, Kim has been making many changes in her teaching in the following areas:

1. **Physical arrangement of classroom**—student desks originally in rows, now in clusters. Introduction of rug into classroom.

2. **Management structures**—originally all work assigned on daily basis, daily reading groups. Now reading groups and assigned seat work only three times a week.

3. **Personal Freedom**—Initially students allowed to move around room only with teacher permission. Now move freely around room, but still relatively limited choices of activities.

4. **Teaching style**—shift from teacher directed to student centered instruction.

5. **Learning Activities**—Gradually introduced journals, thematic units, process writing, procedures for eliciting prior knowledge.

6. **Expectations and instruction for special needs students**—originally felt lesser expectations and different assignments were necessary for special needs students. Now, twice a week, special needs children participate in the same learning activities. Kim is amazed with the success of the special needs students. She does more pulling out of what students know. It is as if she has begun to realize that special needs students are not "empty"—but have a lot to contribute.

YEAR 1

2/89	Observation. Observed high and low reading groups.
2/89	First workshop. Getting acquainted. Explanation of project. Introduction to whole language/integrated language theory. Watertown teachers attend in spite of work to rule decision by teacher's union.
3/89	Observation of low reading group. Short debriefing with Kim about lesson, students, and homework assignments.
4/89	Watertown teachers miss second workshop because of strike.
5/89	Interview. Questions relate to: educational background, professional experience, self perception, classroom management, language arts, and integration of special needs students.
5/89	Visit to Kim's classroom by all FULFILL teachers, as part of workshop. Kim gives demo lesson. Discussion of lesson by all workshop participants.
6/89	Two day summer institute. Video of whole language classroom. Sharing of curricular materials among FULFILL teachers. Guest speaker on whole language teaching strategies. Make and take opportunities. Guest speaker on diagnosing writing difficulties.

CONCERNS AND REACTIONS TO INTERVENTION: YEAR 1

Throughout Year 1, and in spite of a bitter teacher strike, Kim remained cooperative with FULFILL staff. He statement of concern (6/89) reflected some confusion about project expectations ("I still don't understand how the children are going to be followed. . . I don't think I know exactly what is expected of me as far as logs, etc. I'm not clear how much I'm supposed to change."); but also positive feelings about her participation ("I enjoy sharing ideas," "I'm looking forward to seeing other classrooms and how they are run," "I've had to be more introspective. I'm not used to analyzing everything I teach—how and why. It's been a good learning experience.").

YEAR 2

9/89	"Drop-in." Desks rearranged into clusters.

9/89	Observation. (Phonics worksheet with whole class). No debriefing.
11/89	First Year 2 workshop. Review of project goals. Videotape and guest speaker (classroom teacher) on writing process. Kim impressed with samples of books written by students. Also impressed with writing conferences on video. Remarks on how much students seem to enjoy one-on-one time together with teacher.
12/89	Observation. Seat work, low reading group, and read-aloud time (Kim reading to whole class). Intensive debriefing (35 minutes) concerning focal special needs student. Discussion of other aspects of lesson affecting special needs students.
1/90	Second Year 2 workshop. Focus on helping teachers to use literature to develop thematic units. Fine-tuning to assure integration of special needs children. Sharing among teachers. Kim tells of successful results eliciting prior knowledge in writing assignment. In statement of concern, Kim comments, "I'm enjoying the project. I don't mind the observations. Actually I find the feedback helpful. The time involvement doesn't seem to be a problem. It really makes me look at my program." "The workshops have been very helpful and informative. I'm looking forward to the next workshop."
2/90	Planning Session. Kim suggests making books with her top group. Remind Kim that focus of project is on special needs children. Kim agrees to doing activity with low group.
3/90	Co-teaching. Assisted Kim with writing activity once a week for five weeks. Took turns leading brainstorm discussions and interacting with students. Simultaneously conferenced with students. Students first collaborated on group book. Later wrote individual books. Involvement and success of special needs students surprises Kim. When poorest reader in class flawlessly reads group authored poem, Kim comments, "For Genevieve to read that off the board is like a miracle."
4/90	Co-teaching. Last of six lessons in book-making cycle.
4/90	Year 2 Interview. Kim continues to have different assignments and expectations for special needs students. ("Top group asked to write two new chapters of the Drinking Gourd. Special needs expected to do some work.") but says she is now more aware of need for special needs students to write. Asked about changes in Year 2, says she is

using more trade books interspersed with basal readers (for top groups).

Attributes changes to courses she has taken in graduate school, workshop at EDC, and make-up of class.

Directions for future change—says she intends to start with journal writing, "right from the beginning" next year. May try writing books with mixed ability groups.

5/90 Site visit to see whole language in action. Kim commented workshop was "very useful and helpful." Impressed with blending in of special needs students and exciting writing program ("The publishing center in the second grade was fantastic! I hope to use a lot of the ideas she shared").

CONCERNS AND REACTIONS TO INTERVENTION—YEAR 2

In her statement of concern at the end of Year 2, Kim comments: "My involvement with the project has really helped me change my techniques in the classroom, to develop the writing process and literature-based reading." "The special needs children are benefitting by the special *interaction* (intervention) within the classroom."

YEAR 3

9/90 Planning for Year 3. Kim says she would like to do more whole language this year. Bought big books and wants to do publishing. Says she will incorporate special needs students "at their own level." Says, "I love being in the project. It has exposed me to things I wouldn't have been exposed to otherwise—not even from my classes. I've gotten a lot of materials and information, and I've had to do things that I wouldn't have done otherwise, like zeroing in on kids, and having someone over my shoulder saying, "Come on, come on, you gotta do it." This is coming from someone who was not thrilled about being involved in the first place." Concerning workshops she says, "These are great. I love going to them. I love seeing other schools. I love the speakers."

10/90 Observation and debriefing. Basal lesson with low reading group. Sight words taught in isolation. Emphasis on factual questions.

Debriefing. Reviewed test results, and brainstormed teaching strategies for focal special needs student.

10/90 First Year 3 Workshop. Visit to Westwood, a school district in transition to whole language. Kim impressed with focused concentration of students on rug during share time. Decides to bring rug from home into classroom.

11/7/90 Planning, Observation, and Debriefing. Kim describes Shark thematic unit students currently involved in, that "just happened." As Kim tells it, "We had finished the owl unit. And I asked them what they would like to learn about next. Somebody said, "Sharks." And someone else said, "Yeah, sharks, those are really neat." So my student teacher got a whole bunch of shark books. Then we got a video. . . And it just happened. All of a sudden, they got into making these pictures. When we came back from lunch, I don't even know how it got started, all the kids started making pictures of sharks. Then I said, "Why don't we cut out letters and put up sharks on the front (bulletin board). . . .Well yesterday, it was mostly just pictures, so I said to them, "Yesterday we did a lot of picture stuff about sharks. Today I think I'd like to see if there's words you can tell me about sharks. We have story books back there, we have factual encyclopedias and we know a lot about sharks because we saw the video. I said, so why don't we just get together in groups, or with whoever you want to work with and you can write all you want about sharks. Well, they can't wait to get back from recess so they can work on their books again. One person's got nine pages, all off the top of her head. She has read a lot of material and she just put it down. She didn't copy off the board. The ones who had trouble writing anything were able to copy what was up there (on chart paper). I was watching the kids, like Lisa, (Kim's focal special needs student). She was just as much into this as the rest of the kids. Nancy (another special needs student) was writing away and reading in all these books, and shouting, "Hey look at this!" "Hey look at this!" They love it and they're loving every minute of it. It just sort of happened.

Kim told us students do this thematic unit work during language time. "Instead of my giving them seatwork to do." Sometimes I have reading groups going, and the other kids are off doing their thing (thematic unit study)."

In spite of success of shark unit, Kim expresses doubts about doing another thematic unit. "We're going to try the same thing with whales; but I don't even know how it's going to go."

Observation confirms students' enthusiasm reported by Kim. Special needs students involved but often just copy sentences from books without understanding.

At close of school rug brought into classroom by Kim's son.

11/8/90 Observation and Debriefing. Shark unit, continued. Rug used for first time. Students share their work (on rug) with enthusiasm. Kim makes special accommodation for child who cannot read his report by asking him to share orally. Kim forgets to call on two special needs children FULFILL has been following most closely. When asked about these students, Kim is annoyed with herself for forgetting. Discovers these two special needs students have copied words verbatim from book and have difficulty reading what they have written. Strategies for making unit more meaningful for special needs students are brainstormed. Planned for co-teaching session on whales.

12/6/90 Co-teaching and Debriefing. We work with a group of six students of heterogenous abilities—three special needs and three normally achieving, on introductory whale activity. Children are asked to brainstorm what they already know about topic, and what they would like to find out. Special needs students very involved. Much concept related student talk.

In debriefing, Kim comments on her own ambivalent feelings about whole language, in general, and about the changes she has made. "And the whole procedure just happened by itself and I let it do that; whereas other years I don't think I would have. I was so programmed into the curriculum. I'm more relaxed about that. But it goes against my grain when I see what (schoolwide achievement) test scores are and I'm not getting to what I should be getting to. And I am not totally convinced. I know this is good and I know that it gives kids a lot of thinking skills and research skills. But I am not totally convinced that letting go of all the skill areas is what is needed." Kim said that she felt that special needs children needed more attention paid to skills, not less.

12/10/90 Second Year 3 Workshop. Guest speaker who is a teacher, discusses evaluation of students' work in a whole language classroom. Kim says she found suggestions very useful. Thinks she will try a math journal.

12/11/90 Observation. Kim shows video on whales which students discuss. Special needs children participate on equal footing.

12/18/90 Co-teaching and Debriefing. Continuation of whale unit. Students working on reading and writing about whales. To assist students in data collection, Kim has distributed an outline worksheet specifying the kinds of information (questions) to research. All children involved. In debriefing, Kim says after vacation she plans to use trade books, interspersed with basals for all groups. Kim has become concerned about Lisa's (focal student) reading problem. When Lisa worked on the basal only, her reading problems were not apparent. Now that she is reading content related materials, her difficulties are obvious.

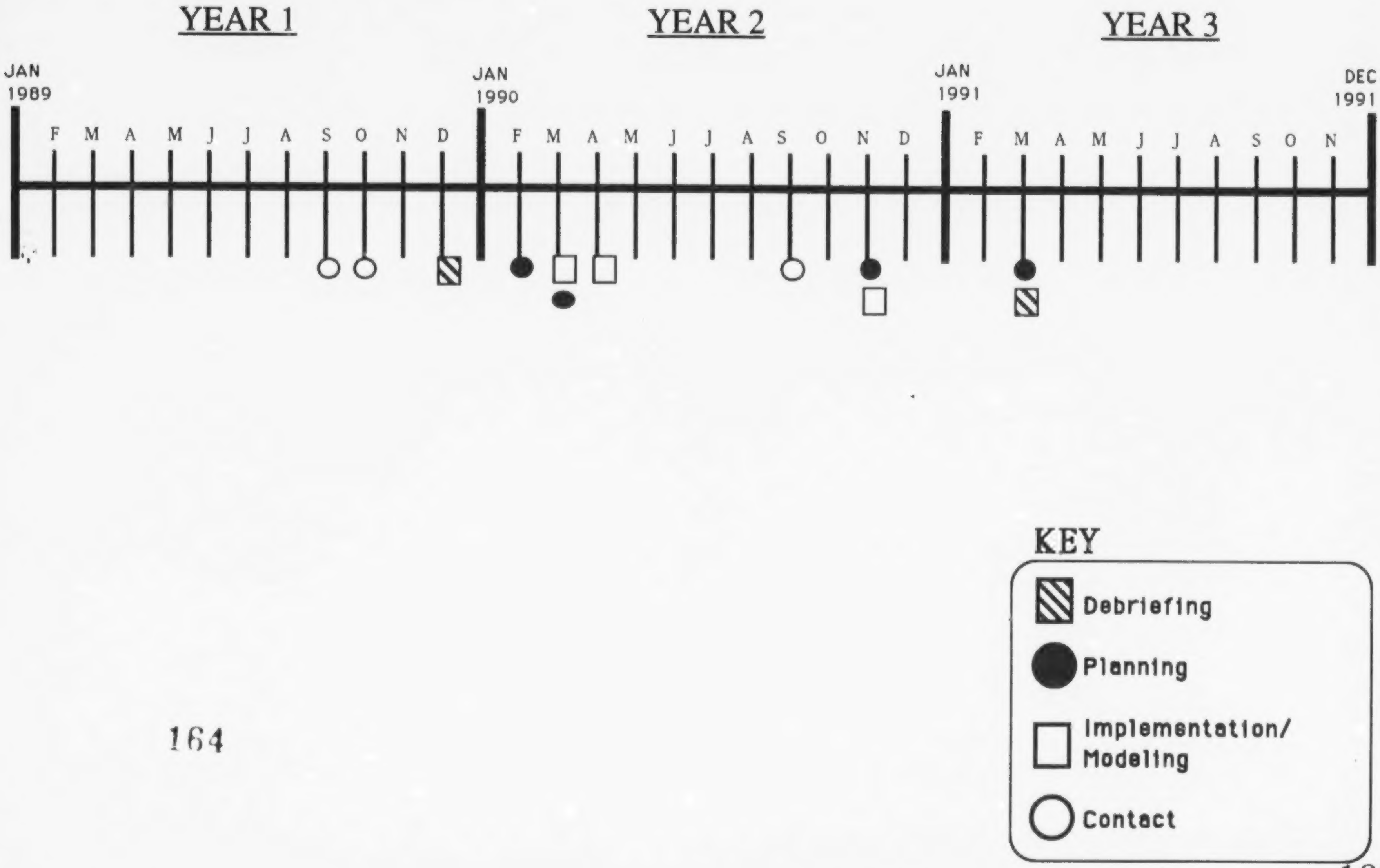
3/1/91 Planning and Debriefing. Kim talked about very successful penguin thematic unit. Attributed success to strategy of eliciting prior knowledge at start of unit. Brainstormed lists of what I know, what I think I know, and what I would like to know (strategy demonstrated by speaker at last FULFILL workshop, though Kim couldn't remember where she learned it).

Kim reported students now enthusiastically working on writing stories on topics of their choice. "They love writing stories—I can't tell you how excited they are about it. They'd do it all the time. Discussed special needs students. Kim says Lisa has "Really come into her own. She never can do phonics but she reads some words you'd never believe. I'm really thrilled with her." Kim is no longer concerned about teaching reading groups only three times a week. Says students want to read all the time and in addition they're always doing reading when they write." Kim says she teaches skills individually and in mini-lessons.

3/7/91 Observation, Assisting in Classroom, and Debriefing. Kim suggests I work with George. George is working on third page of his story. Kim is astounded by the sophistication of his story line. She comments that when she started story writing unit, she didn't know what she'd get from her students. Debriefed about successful progress of special needs students.

NAME: Kim
TITLE: Teacher

Appendix H



Appendix I

PRACTICE PROFILES

Components of a FULFILL classroom image

CLASSROOM ORGANIZATION (Physical & Social)

1. Desks or tables grouped for flexibility
2. Learning Centers equipped with a rich variety of materials/activities available (thematic, multi-sensory)
3. Materials easily accessible to students: pencils, paper, erasers, construction paper, crayons, scissors, scotch tape, etc.
4. Management structures in place which allow for student autonomy (contracts, choice board, planning sheets)
5. Children allowed to move around, talk to peers without teacher permission.
6. Rich displays of print and language.

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INSTRUCTIONAL PROCESS (TEACHER DIRECTED)

1. Teacher keeps children focused on target
2. Teacher encourages child to draw on own prior experiences.
3. Teacher frequently links children's ideas together
4. Teacher focuses on teaching in a conceptual way with skills taught in the context of literature and student writing
5. Teacher makes effective "spur of the moment" adjustments to lesson based on students' reactions and comprehension
6. Teacher ascertains that instructions have been given clearly & that students (including SPED) understand what's expected of them. If not, she has strategies for clarification.
7. Teacher encourages learning to take place within a social context (children encouraged to see others as sources of information, peer conferencing, cooperative learning).
8. Students are allowed to make multiple choices within learning activities.

INSTRUCTIONAL PROCESS (INDEPENDENT LEARNING)

1. Teacher allots approximately 2 hours for the purpose of independent language work.

2. Management structures in place that allow for student autonomy (contracts, choice board, planning sheets).

3. Students are allowed to make multiple choices within learning activities.

4. Children are encouraged to use a rich variety of materials depending on context.

5. At least half of the activities offered are of an open-ended nature (activities where there is not one right answer; can be tailored to fit many levels).

6. Formal time is set aside for sharing.

7. Teacher encourages learning to take place within a social context (children encouraged to see others as sources of information, peer conferencing, cooperative learning).

8. Teacher usually focuses on child's reading/writing strategies, to assess progress (eg. info gained from writing folders, anecdotal records, invented spellling and miscue patterns)

9. Assessment extends learning through extensive interaction between teacher and child or between peers.

STUDENT/TEACHER INTERACTION (INTERPERSONAL)

1. Teacher elicits students' responses. When students do not respond, teacher rephrases questions and waits for response. When students do respond, teacher gives positive feedback and elaborates response.
2. Teacher usually encourages students to elaborate on their own responses.
3. Teacher offers to help child (when this is appropriate)

INSTRUCTIONAL PROCESS/WRITING

1. Writing is considered a process that allows children to work at their own pace
2. Writing is seen as an on-going day-to-day process
3. Students can generate their own topics (even under a category or topic area
4. Teacher uses a variety of activities to help kids generate ideas in the pre-writing stage
5. Invented spelling is encouraged to help flow of ideas & teacher provides help in transition stage, as appropriate to grade

INSTRUCTIONAL PROCESS (READING)

1. In connection with the reading selection, uses 2 or more teacher-developed/selected strategies and elicits prior knowledge based on students' needs
2. Multiple ways to facilitate understanding (discussions, art, writing)

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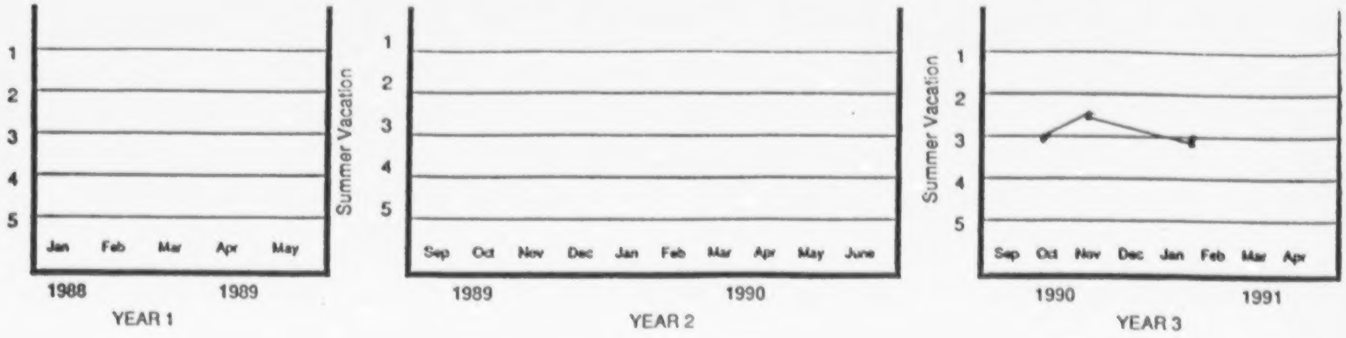
Appendix J

FULFILL TEACHER RATING

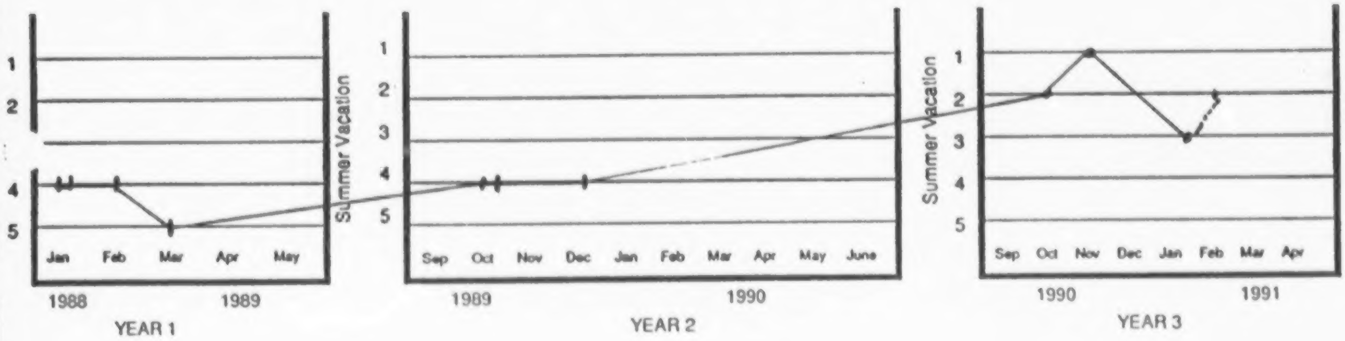
Daily Rating

Teacher:

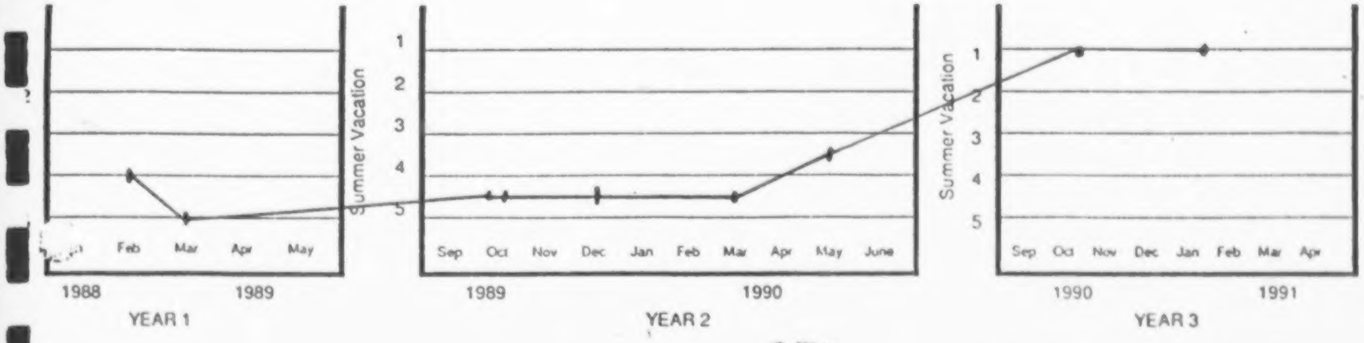
INSTRUCTIONAL PROCESS: Independent Learning



INSTRUCTIONAL PROCESS: READING

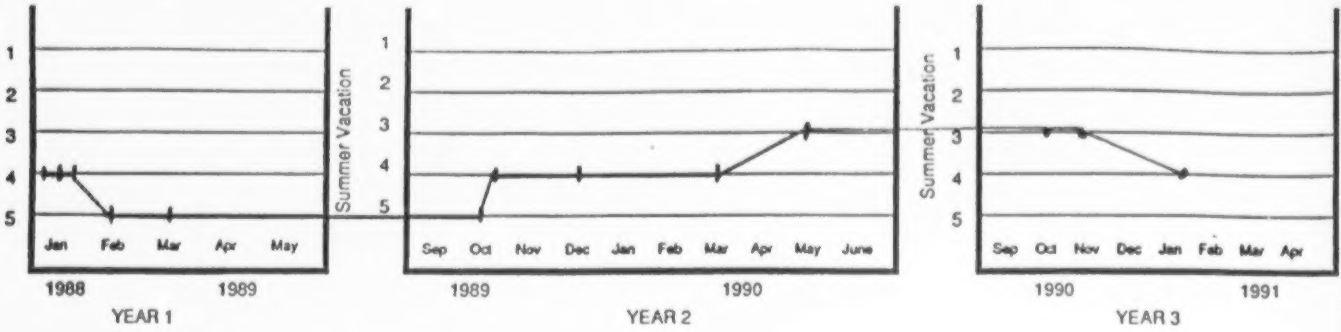


INSTRUCTIONAL PROCESS: WRITING

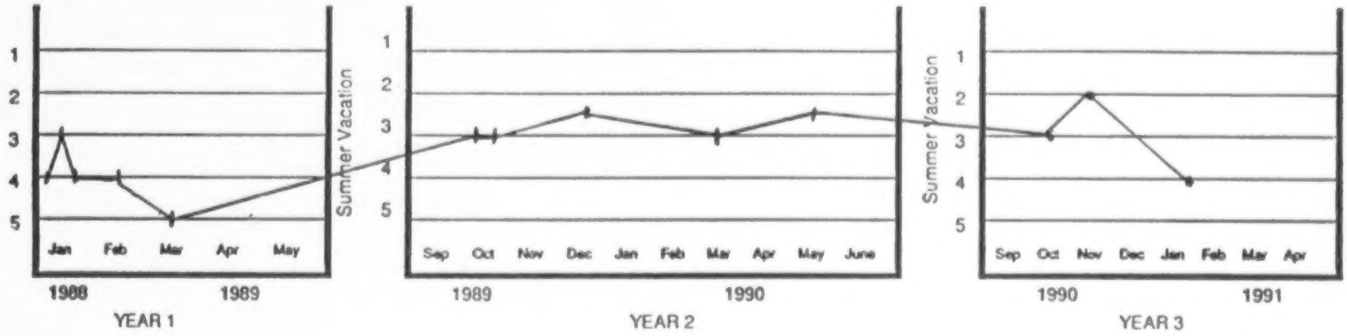


FULFILL TEACHER RATING

CLASSROOM ORGANIZATION



STUDENT/TEACHER INTERACTION (INTERPERSONAL)



INSTRUCTIONAL PROCESS (GENERAL)